



# Water Safe Communities: An Approach Towards Achieving SDG 6.1 in Nepal

## SUMMARY

As per the Constitution of Nepal, access to safe drinking water is a basic human right. A “one-house - one water-tap” policy is being implemented to progressively realize universal access to safe drinking water by 2030, to meet the Sustainable Development Goal (SDG) targets for drinking water. In response to increasing concerns over water quality, UNICEF supported the Government of Nepal to successfully pilot the concept of the “water safe community”. A water safe community is the one where drinking water is (i) available to every household at their premises (as per SDG 6.1) or within 30 minutes round trip (as per basic+2 service level), (ii) water quality conforms to the national water quality standards, (iii) has a sustainable operation and maintenance mechanism, and (iv) inclusive and active water supply user committee. Once the community declares itself water safe, water quality results and other conditions, as mentioned above, are validated by an independent team as per the protocol established by the federal and adapted by local governments. This field note presents the results of piloting innovative programme on Water Quality Management technically known as water safe initiative and in the rural context as Water Safe Community. It also showcases how UNICEF’s advocacy aimed at scaling up Community Led Water Safe Planning (CLWSP) led to a joint pilot with the Government of Nepal in 20 communities for Water Safe Communities benefitting 10,007 people as of March 2020. Furthermore, additional 11, 202 people got benefitted after March 2020 in additional 29 communities, scale up lessons learned were captured in implementation guidelines, which are awaiting endorsement for country-wide implementation by the federal government and have been endorsed by a number of local governments for implementation.

## Background

Since 2018, Nepal is one of the 39 countries, where UNICEF operates Water Quality Plan (WQP) programming at the community level.<sup>1</sup> Indeed, Water Safety Plans (WSPs) were first implemented in Nepal 2006<sup>2</sup> and are part of the regular WASH programme<sup>3</sup>. If the WSP is to

result in a ‘water safe community’ it requires monitoring and verification of water quality and other associated conditions (as defined by the national guideline) and mitigating risks at the community level. However, monitoring of risks and outcomes of the implementation of a WSP is still only rarely done systematically.

<sup>1</sup> Every child lives in a safe and clean environment, Global Annual Results Report 2018

<sup>2</sup> Nepal Water Supply, Sanitation and Hygiene Sector Development Plan, 2016 – 2030

<sup>3</sup> Review of WSP Implementation Process in Nepal, Final Report, WHO, December 2016

With the understanding that water systems work more effectively and are more sustainable when local communities are involved in their planning and management, UNICEF has long advocated for a community-led approach to water safety. The role of the community lies in kick-starting their own improvements to water safety at household and community level as well as following through on monitoring water quality regularly.

#### **BOX 1.**

“If you ask a community, if they have a Water Safety Plan, they would say yes, but if you ask them, what the results of water safety planning are, they do not know because they have not focused on implementing the plan or carried out water quality testing. The test results are not checked.”

WASH specialist UNICEF Nepal

Fundamental to the CLWSP approach is the concept of a Water Safe Community (WSC), which emerged from a combination of UNICEF's experience in adapting and implementing WSPs (as promoted by WHO), and the implementation of the sanitation social movement in Nepal. The CLWSP approach is a spin-off from the traditional water safety planning approach, which puts more emphasis on behavior change, community empowerment and collective outcomes. The focus therefore changes from drafting a plan to actively engaging all households in CLWSP. The intended outcome of CLWSP is achieving water safe status, whereby all households have put in place concrete risk mitigation measures and are actively engaged.

**Table 1: Outline of CLWSP**

Focus	Community Led Water Safety Planning
<b>Minimum criteria:</b>	<ul style="list-style-type: none"> <li>• Community is still ODF</li> <li>• All catchments are protected from animal and human activities and resilient to climate change</li> <li>• All households get water adequate quantity of water free from contamination.</li> <li>• All households use safe storage and handling of drinking water</li> <li>• Water supply system operating mechanism with community participation in place</li> </ul>
<b>Process:</b>	<ul style="list-style-type: none"> <li>• <b>Pre-triggering:</b> engage stakeholders and describe water systems</li> <li>• <b>Triggering:</b> identify and rank hazards, risks, control measures. Develop incremental water safety plans including capacity building on it</li> <li>• <b>Post triggering:</b> implement water safety plans, monitor control measures and plan effectiveness, review/audit water safety plans,</li> <li>• <b>Post water safety:</b> upgrades reporting external support, engage stakeholders</li> </ul>
<b>Certification:</b>	<ul style="list-style-type: none"> <li>• Water quality testing and recording by the water users committee themselves</li> <li>• Water user committee decides to go for external verification once it is confident that all conditions for WSC are met.</li> <li>• Verified/certified externally by an independent body/team, assigned by respective local government.</li> <li>• Certified, if all conditions are met, and declared as a Water Safe Community in a community celebration event.</li> <li>• Water quality tests are done periodically at source to point of use and records are shared community and with local government.</li> </ul>
<b>Outcome:</b>	<ul style="list-style-type: none"> <li>• Pro-active risk mitigation measures</li> </ul>

# Story

## Description of the intervention

Nepal has made significant progress in the WASH sector over the last three decades. As of mid-2019, 79% of households were using basic sanitation facilities and 95% had improved water sources, up from 6 and 46% respectively in 1990. Nepal has achieved tremendous gains in eliminating open defecation during the last ten years, and in September 2019 the country celebrated ODF successes since all 77 districts and 753 local governments achieved ODF status as per the government protocol. Now, ODF sustainability is a growing issue in Nepal with a slippage rate of about 5% at national level (MICS 2019).

### KEY POINTS:

## HIGHLIGHTS OF THE WASH MOVEMENT IN NEPAL

- *School Led Total Sanitation (SLTS) approach to Total Sanitation, 2005*
- *Formulation of National Sanitation and Hygiene Master Plan, 2011*
- *MDG Acceleration Framework, 2013*
- *WASH Sector Development Plan for 2016-2030 has been developed in line with the SDG 6 and with a renewed focus on water quality*
- *2015 Constitution (Article 35) recognizes every citizen's right to safe water and sanitation*
- *2015 -Dedicated Ministry of Water Supply and Sanitation established*
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Despite huge progress made in increasing access to water supply, water quality remains a challenge, largely with a high risk of E. coli contamination both at source and at point of use at households. Results from samples collected for the Nepal Multiple Indicator Cluster Survey 2019 (MICS 2019) reveals that water from 17 in 20 households, and three in four sources were contaminated with E. Coli. I, A survey carried out in Province 2, where more than two third people use shallow tube well water, showed that 89% of samples from point of collection and 96% from households were contaminated with E. coli (ASWA II, Baseline Survey, 2018).

As per the MICS (2019), at least 76% of people have drinking water source within their premise and when needed (two sub-indicators of SDG 6.1 targets) - while only 19% of the people have access to water source within their premises and available when needed that also meets water quality standard.<sup>4</sup> This means an additional 57% (i.e., 76 % -19 % = 57%) could be converted to “safely managed services” through improvements to water quality. Therefore, water quality improvement (at source) presents a “low hanging fruit” to accelerate progress towards the SDGs. The CLWSP leading to WSC concept could be a real game changer for the sector, since it requires relatively small investment compared to major rehabilitation or new infrastructure. Scaling the initiative of WSC (in rural and urban areas) will lead to achieving water safe status reaching from village - ward to municipality and district levels, and from provincial level to national level.

## Defining the benefits and the adaptation of the approach for the Nepal context

CLWSP and WSC are being piloted by UNICEF in many countries in the world and Nepal is the most advanced country in this regard. A water safe

<sup>4</sup> SDG 6.1 Nepal local indicators related to water quality are : i) 6.1.1.4: Households with E. coli risk level in household water  $\geq 1$  cfu/100ml);

ii) 6.1.1.5 Household with E. coli risk level in source water  $\geq 1$  cfu/100ml

community is one where drinking water is available when needed to every household, where

the water quality conforms to the national water quality standards, has a sustainable mechanism for operation and maintenance and also resilient to climate change. CLWSP is a community-based variant of Water Safety Planning: it starts at the community level and is closely aligned with UNICEF's commitment to working with the hardest to reach communities.

UNICEF Nepal refined the approach to fit the country's context and needs. For instance, institutions, including schools and health care facilities, were included in CLWSP and, as Nepal is a disaster-prone country, climate and disaster related risks were an important addition. The national experience of the sanitation social movement informed the adaptations of WSP to CLWSP. Nepal's sanitation social movement was backed by community ownership, government leadership, and donor partnerships. The large-scale implementation of the sanitation social movement approach further provided an excellent entry point for CLWSP. Water safe communities can build on the success of the sanitation social movement through an active role for the community in risk management and in water quality monitoring. Its emphasis on "celebrations" can help sustain motivation for the community to maintain water safety, and to trigger healthy competition between communities for scale-up. Leveraging self-help by communities can also increase collaboration with government, private sector, and civil society at all levels. CLWSP can be introduced to move households up the WASH ladder and sustain ODF results. Water quality is included in the government's national Total Sanitation Guideline (2017), providing the framework for integration of efforts and results among water and sanitation subsectors.

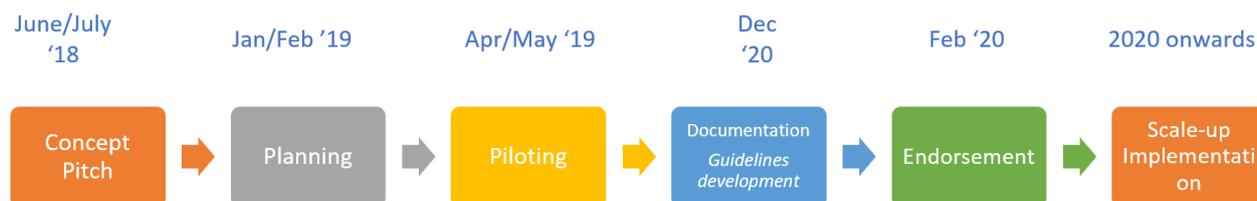
## BOX 2.

### LESSONS FROM CLTS IN NEPAL

- *Sanitation became a nationwide priority through the 'Sanitation Social Movement'*
- *Facilitating linkages between households and different low-cost suppliers, through social marketing, helped households access affordable sanitation options*
- *Healthy competition between local governments to reach ODF, through district-wide participatory planning and review, increased sanitation coverage significantly*
- *Having local government authorities drive change, with flexibility to set local strategies and policies to reach ODF, and to mobilize actors in their communities provides the impetus for local ownership of the programme, therefore increasing sustainability.*
- *The engagement of local governments, especially WASH coordination committees at different levels, district development committees remained critical from the start of the ODF programme.*
- *UNICEF Nepal supported the development of complementary approaches to demand creation, from the sector triggering approach to sanitation marketing. UNICEF Nepal fostered cross-sector collaboration through partnership with the health, education, and nutrition sectors.*

*Source: UNICEF Field Notes on Community Approaches to Total Sanitation: Learning from five country programmes:*

**Figure 1: Timeline of Community Led Water Safe Planning**



Source: UNICEF Nepal

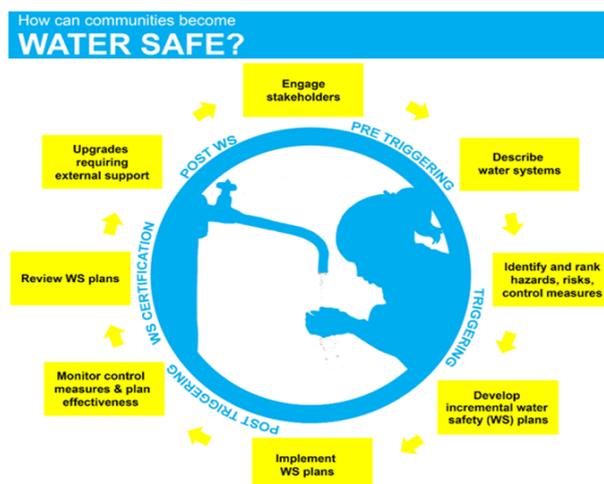
### Gaining buy-in from the government – institutional triggering

The UNICEF WASH team pitched the idea of CLWSP and the concept of a ‘water safe community’ to the government to ensure progress towards shared objectives. The government adopted the approach with a view to later scale up CLWSP through the creation of a social movement for water safety nationwide. CLWSP was proposed with standardized tools and approaches for implementation, including technical guidelines drafted by UNICEF, which were previously endorsed by a number of municipalities.

### Piloting CLWSP approach and tools in 20 communities

Like Community Approaches to Total Sanitation (CATS), the CLWSP process normally takes about three to six months from triggering to achieving water safe status. The steps of CLWSP are aligned with WHO’s WSPs for small communities, with two additional steps included on implementation and monitoring of the plan, for a community to be declared ‘water safe’.

The pilot communities followed the below steps to be declared ‘water safe’.



### A. Pre-triggering

#### Engage stakeholders and describe water systems

The twenty pilot communities (10,007 population) selected were located in UNICEF’s regular programming areas, including those affected by the 2015 earthquake and had recently received infrastructure investment from other donors. A key criterion for inclusion in the programme was that the communities, that are under coverage of water supply scheme and have interest for WSC, selected must have maintained their ODF status and have functional water schemes. Semi-functional water schemes might have been chosen, but additional support and investment was provided to revive them to functional condition, including small repairs and user capacity building. Communities followed the steps of water safety planning and described the water supply system. Next water quality tests were carried out at system and household level during different phases of the process. For each of the

communities, results were collected and documented through self-verification and third-party monitoring.

## B. Triggering

### Identify and rank hazards, risks, control measures; implementation of CLWSP and develop incremental WSPs

Communities, including the water users' committees, are supported in a participatory process, which includes engagement of the community, system analysis (for both gravity flow systems and tube wells), risk identification and water safety plan development. Community engagement through participatory tools aims at triggering a strong emotional reaction. If the community had already developed a standard WSP, then a community meeting is held to review the plan and progress, discuss the WSC objectives and steps to achieve water safe status, including an orientation on safe water handling from collection to consumption.

## C. Post triggering

### Implementing WSPs and monitoring control measures and plan effectiveness

- **Establishing a water quality mechanism at local government level:** including capacity building for the facilitation of CLWSP, water quality testing and other steps to certify water safe status. This includes the development of a water quality monitoring mechanism that clearly defines how water quality should be monitored by the water users' committees, using the testing facilities available.
- **Sustainability Compacts** that state roles and responsibilities of the community, user committees, and local government related to O&M, management of the water supply scheme and long-term sustainability are established. Basically, the roles are divided based on their resource and technical capacity and existing policy on Local Government Operation Act. The

document is signed by user committee and municipality (local government, and witnesses of Ward Chair and UNICEF implementing partners – local CSOs/NGOs) and is enforced by each party.

## D -Water Safe Certification

To be certified 'water safe' a community must meet following conditions:

1. ODF status is maintained
  2. Water User Committee is inclusive (gender, caste/ethnicity/location of taps.) as per government's criteria
  3. WSP is fully implemented
  4. Water supply scheme is functional
  5. Community is aware/knowledgeable on household water treatment
  6. Regular water quality monitoring with data base system is taking place
  7. Water quality surveillance (third party) is provisioned
  8. Community satisfaction scored minimum 80%
  9. Existence of Sustainability Compact
- The process for certification of a water safe community and review WSPs is as follows:

i. **Communities claim water safe status:** Water quality tests are carried out by the village maintenance worker/ Water Supply and Sanitation Users' Committee (WSUCs) using a water quality field testing kit.

ii. **Independent water quality monitoring:** Water quality tests are conducted by accredited/trained external technical teams with representation from different stakeholders (such as the municipality, Water Supply and Sanitation Division Office, CSO, Water and Sanitation Users' Committee, Health Care Facility and UNICEF amongst others); under leadership of a assigned person by Municipality. The test follows the government's Water Quality Monitoring Framework.

Results from 1,548 water quality tests carried out at the beginning as part of baseline assessment revealed that 89 per cent of samples from gravity

based water supply systems and 8 per cent of hand pumps based systems were contaminated (i.e., E.Coli > 1 in 100 ml) while two per cent of 1,157 tests for arsenic (from ground water sources had arsenic level above the national standards (i.e., >50 ppb). As a result of water safe initiative, 100 per cent of 5,593 water quality samples tested for E.Coli and arsenic met the national water quality standards i.e., no E.Coli/100 ml and >50 ppb respectively.

#### **Water quality results and report preparation:**

The independent water quality monitoring team submits verification report to concerned Municipality. The report include the water quality test results (on minimum parameters E. coli and Arsenic), an audit of the water supply system including sound evidence documenting the water sample collection, analysis, and test results such as pictures, video, signatures by all parties and compliance of other conditions as mentioned above. If arsenic is detected certification would not be given but alternative water sources would be recommended and suggest to come next time once new water source that is free of Arsenic is used. So far throughout the project UNICEF has not encountered arsenic levels exceeding national standards.

iii. **Approval of the report by the municipality:** If the water quality results meet the WSC requirements (as per guidelines), the municipality will approve the report of the independent team and give the go ahead for official certification.

iv. **Official certification:** Since a functional water quality monitoring mechanism at community and local government level is considered a pre-requisite for the water safe community. Once the user committee claims with evidence that the community meets all conditions then third-party monitoring takes place and then certify. The local government then approves the request of the community for WSC. Later, WSC declaration event happens, where concerned agencies and/or individuals who contributed their efforts are acknowledged and thanked.

#### **Formal declaration**

Celebrating ODF achievements has proven critical in the sanitation social movement; it can help sustain behavior change as well as promote the approach to other communities (horizontal scaling up). Similarly, among the 20 WSC under UNICEF support a formal declaration of a community as 'water safe' is a cause for celebration. In all the water safe communities, celebratory events were held, in part to motivate other communities to undertake similar initiatives. These events were also used to introduce the WSC concept to the media and other stakeholders. In many cases, a sign board would be put up in water safe communities to acknowledge their achievement and now this became a tradition of feeling proud by communities.

**Figure 2: Declaration event of a Water Safe Community**



#### **E. Post water safety plans**

##### **Upgrades and retaining the status of a water safe community**

Monitoring and maintaining WSC status is discussed with communities as part of the plan. Communities themselves carry out the testing. Initially, daily water quality testing at household was maintained for the first three months, however this was reduced to once every 10-15 days, and then three times a year (such as

before, during and after the rainy season). If the test reveals a positive presence of faecal contamination remedial action must be undertaken by identifying an appropriate mitigation measure. The WASH Act (draft) tabled at federal parliament, indicates that operators/service providers will be penalized, if they serve people with contaminated water. As the Constitution of Nepal says the access to water and sanitation is a fundamental rights, local governments are bound to work with communities to upgrade infrastructures and, furthermore, provide a longer-term solution and level of service to ensure that all people, leaving no one behind, exercise this rights.

## Conclusions

Drinking water quality is a major public health concern in both rural and urban areas of Nepal. Moving CLWSP from concept to reality requires a systematic approach for implementation - from pre-triggering to post WSPs – as described in this note. The successful demonstration of the CLWSP model has helped to make others aware of the available tools and techniques for improved water safety. Advocacy has further played an important role in UNICEF's CLWSP activities to ensure national-level decision makers are aware of water safety issues and the community led approaches, which are available to address them. As requested by the government, the UNICEF Nepal has extended support to the government to draft a comprehensive WSC guideline for country-wide implementation. This will enable other organizations to replicate the WSC approach. Wider implementation is important to disseminate key lessons from experience to inform continued refinement of the approach to CLWSP. Scaling up CLWSP has the potential to greatly increase the equity and sustainability of access to water supply across Nepal.

## Lessons learnt

- Create a “social movement for safe water”, based on lessons from the social movement for

sanitation, reaching ODF. This kind of mobilization strategy has the potential to become a game changer for achieving the ‘One household, one tap’ initiative together with the SDG targets on drinking water. The social movement must be accompanied by guidelines on Water Safe Communities (currently pending formal endorsement from the government).

- Future Municipality WASH Plans, that is aligned with SDG upto 2030, will include the water safe community concept through water safety planning as an important milestone and aim to allocate sufficient funds to achieving the ‘One house, one tap’ initiative’.
- CLWSP, can gain buy-in from the government, if it responds to their priority needs and is adapted to the local context. Thus, local piloting and reflection on emerging evidence remains essential to adapt the approach, tools, and implementation phases.
- The community's leading role in the implementation of CLWSP, especially in rural areas, is key to achieving WSC. Without building the capacity of communities on water quality improvement and monitoring, the initiative can't be sustained. The WSC concept should be part of community-based water management, which also encompasses sustainability, gender, O&M, and wastewater management amongst other issues.
- Safe water is not a standalone issue, it is very important to make sure that sector partners understand inter-related aspects and factors such as sanitation and hygiene as well as WASH sector governance.

## Next steps

- Further demonstration of the concept on the ground will help the sector to scale up the initiative and accelerate progress towards the SDG indicator for access to safely managed drinking water services focusing on the four pillar of scaling up strategy as shown below. UNICEF's WASH team is demonstrating the CLWSP and Safe Water Community approaches in other provinces. UNICEF Nepal

aims to support the government directly or indirectly to reach 4,000 water schemes nationwide (1.5 million people) by 2025, in partnership with WHO and other agencies.

- UNICEF will help to create an enabling environment for water quality monitoring, specifically through providing clear direction and vision (e.g., through developing national guidelines and protocols on water safe community). Establishing a water quality monitoring mechanism at different levels, particularly at local government level, is critical for systematic adoption and retention of the initiative. UNICEF will continue to support the scaling-up of trainings and provision of water testing equipment in each municipality, which the committee can borrow for testing.
- Evidence based advocacy will be conducted at all levels through a systematic communication campaign to build the capacity of a critical mass of stakeholders on water quality improvement. Continue to document and learn from implementation in rural settings and take up the most successful aspects of the model, and to fully institutionalize these elements within decentralized institutions.

## References

UNICEF Field Notes on Community Approaches to Total Sanitation: Learning from five country programmes:  
[https://www.unicef.org/wash/files/2017\\_UNICEF\\_CATS\\_Field\\_Notes\\_II.pdf](https://www.unicef.org/wash/files/2017_UNICEF_CATS_Field_Notes_II.pdf)

Shrestha, R et al (2021) Reaching SDGs at a local level though scaling up the 'Water Safe Communities model in Nepal. Society of Public Health Engineers, Nepal (SOPHEN)

## Photo Credits

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