WASH SDG programme

Approaches to improving water quality in Nepal

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This document brings together the approaches and lessons from the WASH SDG programme, implemented by the WASH Alliance Nepal sub-programme. It is the culmination of a five-year long programme that aimed to increase demand for WASH services, build institutional WASH capacity and strengthen WASH governance.

The programme took a multi-intervention approach, working with local governments, water supply system operators, WASH businesses/entrepreneurs and the local community. In this document, we describe both the approaches that were successful and those which were less so, as we believe both are important for knowledge sharing and learning.

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Content

Executive summary

The WASH SDG programme worked in two municipalities in the **Surkhet district: Bheriganga and Barahataal** and two municipalities in the **Banke district: Kohalpur and Baijanath**.

The objective was to reach a safely managed water service level which is defined as an improved water source that is accessible on premises, available when needed and free from faecal and priority chemical contamination. An analysis collected at the start of the programme showed that many households were not able to move to a safely managed level because the water was not free from contamination. As a result, the SP developed a strategy that prioritised system improvement and risk management.
The sub-programme (SP) interventions have been guided by a municipality-wide framework with three strategic pathways:

Pathway 1 **Behaviour change and demand creation** – targets community members, particularly focusing on women and socially excluded groups.

Pathway 2 **WASH service provision** – focuses on increasing availability of sustainable and inclusive WASH products and services for households and institutional clients through establishing and/or strengthening the supply chain.

Pathway 3 **Strengthening WASH governance** – focuses on the involvement and collaboration with government initiatives.

The WASH sector has traditionally prioritised infrastructure development which is heavily subsidised and implemented by external organisations. It is now evident an effective service delivery requires a collaborative and continuous effort involving various stakeholders, access to reliable information, users' ability to pay for services and the regulatory capacity to influence service provision. It also requires providing skill-building training to entrepreneurs and connecting businesses with community members.
A challenge to the programme was that many households could not afford the upfront costs of accessing safe water. To address this, the SP established connections with community-level financial institutions which helped bridge the financing gap, particularly for marginalised communities and those in the lower wealth quintile.

The SP also lobbied water supply user committees (WSUCs), municipalities and wards to set tariffs and install meters on each tap. This meant conducting tariff determination training, promoting preventative maintenance approaches and good operational practices.

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A significant challenge to the programme was the absence of water quality testing labs. The programme supported the establishment of potable water quality testing services in all four municipalities and conducted comprehensive training for water supply entrepreneurs on testing for 12 different contaminants.

The presence of laws, by-laws and policies within local government was extremely crucial. The programme successfully advocated for the establishment of a dedicated WASH focal person and WASH unit which was responsible for WASH decision making and implementation. One of the key initiatives was to assist local governments in developing their WASH plans. The SP focused on strengthening local governance by establishing policy frameworks, structures, relationships and decision-making processes. This helped improve coordination, planning and alignment among stakeholders and serves as a framework at the local level for coordinating investments, planning and implementing safe water provisions.

The programme introduced a revolving financing approach managed by a water management board. The WASH fund allows users to access funds for upgrades, maintenance, repairs and expansion. The intention of the WASH fund is for it to grow with additional investment from the local government and other stakeholders, and the local government has committed to overseeing this.

Regular water quality testing, consumer satisfaction surveys, efficient leak management, and the provision of an operation and maintenance fund are the foundational and overarching practices necessary to ensure the vitality of the water supply system. Additionally, it is essential for the municipality to allocate a budget to prepare for unforeseen problems to ensure the sustainability of the water supply system.

Programme background

In Nepal, achieving safely managed drinking water service remains a significant challenge. Most of the water sources are contaminated with E. coli due to lack of maintenance and investment in water supply systems. Poor sanitation services also cause raw sewage to be directly discharged onto land which seeps into the ground and polluting fresh water sources. As a result, Nepal faces a high number of water-borne diseases such as diarrhoea, dysentery, typhoid, gastroenteritis and cholera.

The WASH SDG programme worked in two municipalities in the Surkhet district: Bheriganga and Barahatal and two municipalities in the Banke district: Kohalpur and Baijanath. **A 2018 baseline survey in the two implementing districts indicated that only 36% of households had access to safely managed water services.** When looking at the disaggregated data, the safely managed levels were exceptionally low in Surkhet, (Barahataal 7% and Bheriganga 9%) compared to Banke (Kohalpur 45% and Baijanath 58%).

The **Joint Monitoring Programme (JMP)** [washdata.org/monitoring/drinking-water] defines a safely managed drinking water as an improved water source that is accessible on premises, available when needed and free from faecal and priority chemical contamination. The objective of a safely managed water service is to reduce risks to public health and the environment. The term' safely managed' denotes an ambitious standard of services that was established as part of the Sustainable Development Goals (SDGs).

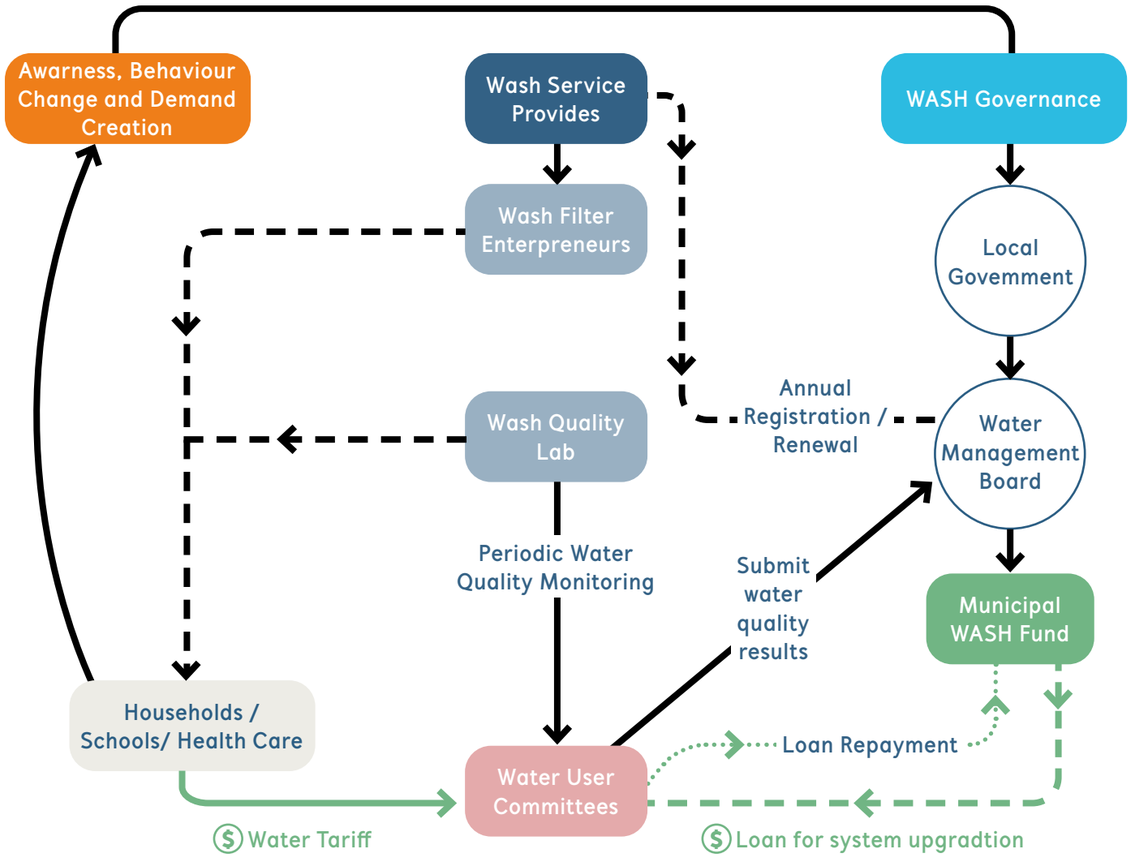
Following this assessment, the WASH SDG programme implemented multiple approaches and tools to address and improve the level of safely managed services. The programme's focus was to bring systematic change by understanding the root cause of the issue and strengthen the systems that deliver water services. The approach looked beyond infrastructure to also consider the people, partnerships, incentives, laws and policies that were necessary to make it work. **The success of this approach was highlighted through the endline assessment which showed that 62% of households had achieved access to the safely managed water services.**

Municipality wide framework for safe water

A municipality wide framework was developed to ensure safe water quality provisions were adopted in our programme areas. We piloted this approach in Bheriganga municipality, where a Water management board was formed, comprising of representatives from the local government. Under the Water management board, a five-member water committee was established to oversee all WASH related activities such as periodically monitoring water quality at the water supply systems level and ensuring the registration of water supply systems.

Within this framework, the role of community-led water supply user committees is central. All water supply user committees (WSUC) are registered with the municipality and must annually renew their status based on the regulatory norms set by the municipal water committee. One of the mandatory requirements for renewals is that the WSUC periodically monitors its water quality and ensures the supply of safe water throughout the year. The regulatory compliance of the water quality is monitored by the municipality water committee.

Programmatic Approach to Improving Water Quality



The sub-programmatic interventions have been guided by the framework shown above. Throughout the programme period, the programme has worked with different stakeholders to ensure the essential components of the framework function as intended above. To help with this, the programme has provided technical assistance to the different stakeholders.

The municipality-wide framework for safe water was guided by the three strategic pathways of the WASH SDG programme.

Pathway 1: Behaviour change and demand creation	This pathway targeted community members, particularly focusing on women and socially excluded groups in the intervention area. The focus was on raising awareness among the community members on the importance of using safe water, sanitation and practising key hygienic behaviour. This was achieved through a series of community dialogues, evidence-based advocacy and research, awareness campaigns, demonstrations and capacity building activities in communities, schools and health centres.
Pathway 2: WASH service provision	This pathway focused on increasing availability of sustainable and inclusive WASH products and services for households and institutional clients through establishing and/or strengthening the supply chain. This was done through bringing about the supply of quality WASH services and products by facilitating the development and/or strengthening of WASH related credit products and its access among households, institutions, and businesses; by developing both technical and business capacities to provide quality and affordable services/products; and by building strong relationships among different supply-chain actors through linking to consumers and local authorities.
Pathway 3: Strengthening WASH governance	This pathway focused on the involvement and the collaboration with government initiatives. Together with the government and other stakeholders, the programme mainstreamed the ongoing activities in various sectors of the government, for synergy and acceleration, but also for sustainability after the end of the programme.

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Working with a system strengthening mindset to improve WASH governance

The WASH sector has traditionally prioritised infrastructure development, building facilities like handwashing stations, water access points and piped water networks. These infrastructure projects were heavily subsidised and implemented by external organisations. After completion, they were handed over to local community or school committees following a one-time training session. The expectation was that these committees would take responsibility for the maintenance of the infrastructure, despite a lack of clear financial arrangements in place to support ongoing management, repair and maintenance.

It has become evident that this infrastructure-focused approach does not ensure sustainable delivery and utilisation of services. One-off infrastructure projects are unlikely to reach the necessary scale for achieving the SDGs. Effective service delivery requires a collaborative and continuous effort involving various stakeholders, including policymakers, responsible authorities and service providers responsible for operations and maintenance. Also, multiple factors influence service delivery, such as access to reliable information for decision making, the population's ability to pay for services and the regulatory capacity to influence service provision within the country. The interplay of these components, including the influence of the political economy, ultimately determines the quality and reliability of the services provided.

Community level interventions for behaviour change and demand for safe water technologies

Treating drinking water at the household level is an effective measure to ensure safe water consumption. **The programme collaborated with 98 community groups, comprising 2450 households, to raise awareness about household water treatment and safe storage practices.** By using a facilitation for empowerment and social transformation (FEST) approach, the programme aimed to empower community members to discover their own solutions to problems. Regular monthly meetings were conducted with the community groups to identify and address WASH-related issues. During these meetings, water quality emerged as a consistent and significant concern. Community members were educated about the various water purification options available in the market, along with the advantages and disadvantages of each option. Subsequently, they were connected with local WASH entrepreneurs and businesses. **Between 2018 and 2022, a total of 794 households purchased filters (including biosand, clay and candle filters), and 3892 households were successfully connected to piped water systems.** This participatory approach, where communities make informed decisions for themselves, has fostered a strong sense of ownership and commitment to enhancing water quality practices.

Advocacy at the community level also utilised data to highlight the limitations of current water and sanitation services, with a specific focus on poor water quality. This approach employed evidence-based advocacy, using child-centric risk mapping (CCRM) and community-led risk mapping (CLRM) as crucial tools. This is a participatory process for assessing water related hazards, vulnerabilities, risks through involvement of community members and children. This encourages participatory discourses to identify community actions that are needed to manage the risk. By creating risk maps based on evidence of need for source protection, pipe breakages, water quality test data, etc, we engaged both the community and municipal representatives in advocating for improved water supply systems.

The programme made consistent efforts to create links between communities and WASH businesses. On World Water Day 2022, a WASH innovation fair was organised to bring communities and WASH businesses together in one platform. This event proved instrumental in generating multiple leads for WASH businesses. For instance, a clay filter business that travelled for five hours to attend the fair secured an order for 100 clay filters, showcasing the positive outcomes of such initiatives.

Improving water service provision

A critical analysis of the baseline data collected during the start of the programme indicated that many households were not able to move to a safely managed water supply despite having water accessible on the premises and available when needed. This was because the water was not free from contamination. As a result, the programme developed a strategy that prioritised system improvement and risk management. This included developing climate resilient water safety plans for water systems and identifying potential risks along the entire water supply chain. This approach was useful in conducting risk assessment, management, and communication to develop a comprehensive strategy from catchment to consumer. A water safety plan (WSP) is a way of ensuring the safety of drinking water through the use of a comprehensive risk assessment and risk management approach that covers all steps in the water supply from source to tap. During the assessment phase, it identifies potential sources of contamination and how they can be controlled. Timely corrective measures need to be carried out to ensure safe water is consistently supplied. If the water is not found to be safe after testing, the water safety plan is not considered to have been implemented effectively.

Through the process of conducting water safety planning, it became apparent that contamination from the presence of human or animal waste at the catchment point was a pervasive risk. This represented a significant concern as it can introduce dangerous pathogens, such as E. coli into the water source, leading to diarrhoea and cholera outbreaks. Also, many water systems lacked adequate treatment processes, resulting in the persistence of contaminants such as bacteria, viruses and chemicals. Even in cases where water systems used chlorination, it was often not performed regularly, with only the sporadic addition of chlorine when the water appeared turbid. Overall, these findings underscored the need for improved water treatment processes and diligent monitoring to ensure safe and potable water for all.

The programme supported the installation of automated chlorination units in a number of water systems together with training on chlorination practices. A key advantage of chlorination over other disinfection methods it that it is relatively affordable, widely available, easy to measure and can be dosed without specialist equipment. Making this system automated meant that the correct dose was distributed regularly by the water system operators. However, the water user committee does have to add the measured dose of chlorine to the automated release system. Together with this, other identified risks mitigation strategies such as source protection, infrastructure repair and maintenance, were also carried out and regularly monitored. At the management level, the programme guided water user committees through tariff determination training, promoting preventative maintenance approaches and good operational practices. At the consumer level, awareness on household water treatment options and safe storage practices was created.

Almost all water supply systems are operated by community-based water user committees in which someone collects the fee from the households for distributing water. However some of them do not collect the fee. As a result, whenever major system repairs are required, they must rely on municipal or provincial government funds for maintenance. The programme lobbied the water supply user committees (WSUCs), municipalities and wards to set the tariff for the system and install meters on each tap. The programme also provided capacity building training to WUCs on water safety planning, village maintenance worker training and tariff determination training.

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Box 1. Case study of the WASH innovation fair

"Once our stream was pure, now it screams with dirt
Our ancestors used to drink water there, that story we know
Now we need to clean our city and village
for our lives, to be lived in health."

Laxmi Bika and Samjhana Bikasang this song in dedication at the WASH Mela, a WASH innovation fair in Surkhet, Nepal. The song's plea for clean water was supported by the innovation fair's diverse and engaging programme to highlight the importance of water and sanitation in the area. In addition to artistic performances and information, the fair also provided opportunities to directly connect with more than 20 innovative and enthusiastic entrepreneurs, who had their WASH products and services on display. From compostable menstrual pads to ceramic water filters and composting worms – if an entrepreneur wanted to get innovative and make improvements in WASH, the Surkhet WASH Mela was the place to be.

A truly diverse audience

Several high-level government officials participated in the event, including the mayor and the regional minister for Water Resources and Energy Development. Noting that 17 percent of people in Surket do not have access to safe water, they detailed the commitment of responsible authorities to formulate the water safety plan and the water utility masterplan. In their speeches they also shared the plans to scale up drinking water quality testing – an effort that was also supported by the WASH SDG programme in Nepal.

As the first edition of its kind, the WASH Mela attracted a truly diverse audience. In addition to the government representatives, the district water officer, the drinking water federation and sanitation users committee, other NGOs, the national federation of people with disabilities, and journalists were present. The event was also well attended by local residents: over 1200 people visited during the day.

An informational, interactive and culturally representative fair

The location was at the local school premises, which also led to the involvement of school children who prepared different presentations and art performances to voice the importance of women's rights and their need for appropriate water and sanitation facilities. The students were motivated to contribute to reaching three stars for the WASH facilities at their school – the best rating possible in Nepal.

"I have never seen anything like this regarding WASH happening in our area before, this fair has provided us many options for clean drinking water and safe sanitation,"***– a participant of the WASH Mela.***

Many people attending the fair were dressed in their cultural attire and were enjoying the fair with their children and family, enjoying refreshments and food from local food stalls and ice cream. The concept of connecting WASH information, entrepreneurship and an interactive programme involving different local stakeholders is a promising concept to further improve WASH in Nepal. Hopefully, this will bring communities one step further to bringing the WASH Mela song to life, with clean cities and villages and for lives to be lived in health.

Water quality testing labs

When the programme initiated programming with the aim of improving access to safely managed water in the project areas, the absence of water quality testing labs presented a significant challenge. Evaluating the safety of drinking water required relying on field testing kits or travelling to labs located outside the municipality. It was important to ensure communities and water systems had convenient access to test their water quality. To tackle this issue, the programme supported the establishment of potable water quality testing services in all four municipalities.

The programme plan was to create mini testing labs capable of conducting routine bacteriological analysis of water, detecting total coliform, faecal coliform, arsenic, and other common minerals and contaminants. Each lab would be staffed by a technician responsible for analysing samples and performing tasks such as media preparation and equipment sterilisation.

To accomplish this vision, the programme conducted a comprehensive training programme on water quality testing. This training equipped participants with the necessary knowledge and skills to collect, handle and accurately test water samples. Following the training, the programme identified four motivated entrepreneurs and provided them with the necessary testing equipment to establish their own labs.

Under a tri-party agreement between the in-country partner, the local government and entrepreneurs, four quality labs capable of conducting water quality tests on 12 different parameters, including arsenic, nitrate, iron, turbidity, pH, and microbial contamination, were successfully set up. The setup of the labs varied in each location. In Kohalpur municipality, the lab was established within a water supply system office. In Baijanath rural municipality, the programme collaborated with a biosand entrepreneur who wanted to offer water testing services alongside water filtration systems. Similarly, a cooperative in Bheriganga and a hardware shop in Barahataal expressed interest in setting up their own labs.

The water quality labs were also crucial for conducting water quality tests during the midline and endline assessments of the WASH SDG programme.

Lessons learned

The most critical aspect of operating a water quality lab is ensuring its business viability to sustain the service. The four entrepreneurs supported by the programme had different entrepreneurial journeys. The entrepreneur in Baijanath, who provided biosand filters along with water quality testing services, found that the two services complemented each other. After conducting water quality tests, if the samples were contaminated, he offered biosand filters as an effective and durable solution. He also found success by collaborating with other NGOs that required water quality testing in their programme areas.

The water quality lab in Kohalpur was established within the premises of the small town water supply system, eliminating the need for rent expenses. The water supply system already conducted regular water tests, and with the addition of the lab, they could perform these tests independently while also making the service available to other interested community members, healthcare institutions or water supply systems.

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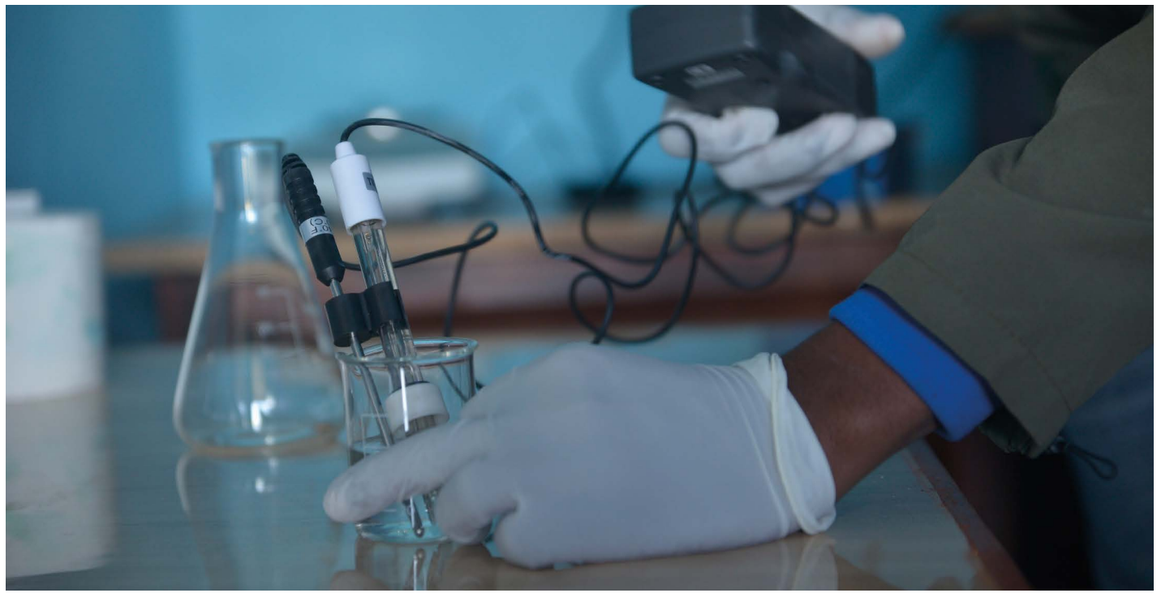
The water quality lab established in Barahataal faced challenges as the two entrepreneurs trained through the programme moved away from the location to pursue higher education. Despite this setback, the hardware shop intended to continue the business but has not achieved significant success. The lack of significant success is also due to the low demand of water quality testing services in the rural area of Barahataal municipality. Conversely, the lab in Bheriganga has high growth potential. Being the first of its kind in the municipality, there was no clarity in the process of registering a water quality lab. They missed a valuable opportunity to bid for a water quality testing service from a neighbouring municipality due to a lack of registration. Recognising these challenges, the programme worked together with the municipality to develop policies and standards for regulating water quality labs.

Box 2. Water quality lab entrepreneurs

Arjun Bishwokarma (32) is one of the entrepreneurs who received training on water quality testing through the WASH SDG programme in Nepal. He is a young, ambitious individual who runs his own biosand filter business. He has been in the industry for the past seven years and moved to Banke only three years ago in search of a better market for his product. Since taking the training led by our WASH Alliance partner ENPHO, Arjun has now expanded his business to provide water quality testing services as well. A certificate of training completion proudly hangs inside the lab.

"I am now selling biosand filters as well as providing them with the service of testing their water quality. These two really complement each other. My future plan is to create a WASH-mart that has all services and equipment's related to water, sanitation and hygiene available as a one-stop shop." ***–Arjun Bishwokarma***



Creating links between WASH businesses, financing institutions and the community

Creating links between WASH businesses, financing institutions and the community was a crucial strategy of the programme. The aim was to balance the demand generated by the community with the supply of services.

One of the programme-supported biosand filter businesses began producing filters after receiving training from the programme. As the product gained success, the entrepreneur expanded her offerings to include toilet rings and even provided a complete toilet construction package. The other entrepreneur, a single woman supporting her daughter, also increased her income by selling biosand filters.

In the areas where the programme works, community members often have limited disposable income. The upfront costs of purchasing water treatment technologies or connecting to piped water systems can be unaffordable for them. However, the programme was determined not to let their financial situation hinder their access to safe water. To address this challenge, the programme established connections with community-level financial institutions. These financial institutions played a vital role in bridging the financing gap, particularly for marginalised communities and those in the lower wealth quintile. By fostering partnerships between local finance institutions, such as microfinance institutions, and WASH businesses, the programme was able to achieve economies of scale. For example, few community members were interested in purchasing clay water filters from a business located in another municipality. The business owner was interested in supplying filters but the transport costs to bring a few water filters was too high and this would result in a higher cost for the community member. Through the support of our community mobilizers, the programme linked together 100 community members interested in purchasing the filter with the business owner. Because of this, the programme was able to offset the additional transport cost while keeping the cost for filters low. In another case, the programme was able to mediate subsidies from the water system for households to connect to piped water system. These links between WASH businesses and the communities helped to make WASH solutions more affordable and accessible to the community.

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Lessons learned

An essential element of building a sustainable WASH service is providing skill-building training to interested entrepreneurs. Community members are often keen to start a business but they lack the confidence in their business skills and the viability of the business. Providing the right support can be motivating and effective.

In rural areas, it can be a challenge to encourage new entrepreneurs because there is not a big market and customer base in these areas. Before supporting the establishment of new businesses, a feasibility study needs to be undertaken to look at the sustainability of the business. However, sometimes it is not necessary to take risks. Likewise, to ensure the success of any business, it is also important to connect businesses with community members.

Box 3. The story of Pabitra

Pabitra Kathayat, now a successful WASH entrepreneur, was a housewife until the age of 30. She embarked on her journey as an entrepreneur after successfully completing training on making biosand filters. Her training, along with the simplicity of the technology and its effectiveness in purifying water, served as an inspiration that sparked Pabitra's decision to start her own company. Her story is a great example of what effective private sector engagement can achieve in not only ensuring that communities have access to safe drinking water but also improving human lives at an individual level.

The training that Pabitra attended was a key component of the WASH SDG programme which aimed to increase private sector engagement in the provision of sustainable WASH services. Through the programme, trainees like Prabitra received mentoring support to develop key entrepreneurial and business skills that were crucial to their success. This mentoring included (but was not limited to) fundamental business practices such as marketing, product pricing, financial management, accounting, taxation and statutory compliance.

Pabitra's business expanded due to strong demand, allowing her to reinvest her capital in technical upgrades and diversify her product range. Two new employees were brought on to help with her rapidly growing business. Her company was vital during the peak of COVID-19, when abandoned community halls had to be transformed into isolation units. Within these isolation units, Pabitra's biosand filters ensured the patients had access to safe drinking water.

Pabitra is just one of many entrepreneurs supported through the programme. Her success story is one that shows the effectiveness and long-term positive impact of supporting female entrepreneurship in establishing sustainable markets.

Strengthening WASH governance

In Nepal, municipalities play a central role in the delivery of WASH services as well as in water governance. They have the authority to establish policies and regulate systems, making them crucial for ensuring the sustainability and management of development interventions. To achieve sustainability, resilience and accountability in WASH services, it is essential to have robust policies, financial systems and monitoring in place.

To ensure the provision of safe drinking water for the community, the programme focused on strengthening local governance by establishing policy frameworks, structures, relationships and decision-making processes. One of the key initiatives was to assist local governments in developing their WASH plans. This helped improve coordination, planning and alignment among stakeholders in their efforts to achieve their WASH vision and municipal goals. The WASH plan serves as a framework at the local level for coordinating investments, planning and implementing water and sanitation objectives. It also guides the allocation of yearly budgets based on defined priorities.

The development of the WASH plan involved a participatory process that included creating various funding scenarios for the short, medium and long term. Additionally, the plan serves as a tool for advocacy, raising awareness about the need for national and external support, and justifying project proposals and funding opportunities. It also establishes a foundation for enhanced sector management and monitoring.

Recognising the importance of a formal WASH structure within local governments, the programme requested the appointment of a dedicated WASH focal person responsible for coordinating all WASH-related activities. Since this was not a formally appointed position, the WASH focal person often faced competing priorities and had limited knowledge of WASH issues. As a result, the programme conducted capacity building trainings for the newly appointed WASH focal person, including training on the national WASH data management system.

In some of the municipalities, the programme successfully advocated for the establishment of a dedicated WASH unit, which holds the responsibility for decision making and the implementation of WASH activities. In one of the four working municipalities, a dedicated office space was established to support regular operations.

Box 4. WASH policies, by-laws and regulations developed through the support of the programme

Municipality	Policies, by-laws, acts			
Kohalpur municipality	WASH plan	Faecal sludge management by-laws	Waste management bill	Kohalpur municipality WASH policy
Baijanath rural municipality	WASH plan	Water use bill		
Barahataal rural municipality	WASH plan	Water use master plan (WUMP)	Drinking Water Management Act	
Bheriganga municipality	WASH plan	Water management procedure	Sanitation and waste management procedure	

Lessons learned

Following a federalisation of the governance structure in Nepal, the local governments were given more powers to improve efficiency in local-level planning, reduce administrative costs and make citizens more politically aware. The constitutional entitlements came into effect in 2017 and the WASH SDG programme began in 2018.

To create an enabling environment for WASH service delivery, the presence of laws, by-laws and policies was extremely crucial. Without it, the system to regulate and influence a safe and sustainable WASH service was lacking. The formation of these laws was also essential to ensure socially excluded communities were prioritised in the planning process. The development of some of these strategic plans, like the WASH plan and water use master plan, was instrumental in guiding the municipality in a systematic way about the priorities for budgeting in the coming years. Despite these accomplishments, the local governments effectiveness in implementing these plans and policies was low to moderate because of the slow political transition, capacity constraints, legal ambiguities and resource constraints. The coordination among local entities, between local and provincial governments, and between local and federal governments is inadequate in terms of planning and implementation. Efficient public resource mobilisation and creating an enabling environment for private sector development is still in its infancy despite having a high potential.

Strengthening WASH financing

WASH financing is a challenge not just from the government funding perspective, but also generating buy-in from the private sector and financing institutions. Financing institutions are less inclined to give WASH loans that are not explicitly tied to income generating activities. Likewise, the local government has many competing priorities, even when funds are allocated for WASH service improvements, they are not sufficient.

To address this challenge, the programme introduced a revolving blended financing approach which diverges from the conventional reliance on government and grant funding for building or upgrading water system infrastructure. Building upon existing knowledge and expertise, this approach emphasises the implementation of community-based water treatment options combined with a revolving blended financing model. Blended models have proven to be an appropriate tool to move away from purely concessional donor finance towards market financing.

The programme supported the establishment of a water management board which is chaired by the mayor. This board manages a WASH fund which operates on a revolving basis, allowing water system users to access funds for upgrades, maintenance, repairs and expansion. For the establishment of the WASH fund, the programme provided seed money and the local government has committed further additions to the fund. The funds will be repaid on an earmarked instalment (EMI) basis with no interest charged, ensuring equitable access for all. In order to minimise the risk of loan defaults, the municipality has implemented provisions that include financial clauses and conditions, to ensure timely repayment of loans.

The WASH fund is already supporting one water system user committee to add a water treatment component and also make necessary upgrades to their system. Once this particular water system user committee (WSUC) returns the funds, they will be redistributed to other WSUC's that require financial assistance. The intention of the WASH fund is for it to grow with additional investment from the local government and other stakeholders. This will ensure that those managing and using water schemes have financing alternatives to independently maintain and expand their own infrastructure. Even after the programme ends, the local government has given a commitment to continue supporting these communities by overseeing the revolving fund.

Recommendations for future programming

Ensure there is a municipality (or region) wide framework for monitoring and coordinating WASH related activities and services. If one does not exist, work with the relevant stakeholders to develop one.
Having a shared framework is important for ensuring coordination between public and private stakeholders and ensuring the provided services and activities meet water quality standards.

The sustainability of safe water supply systems should be supported through the development and implementation of climate resilient water safety plans that prioritize system improvement and risk management.
Within the programme, the development of water safety plans was an important step in developing a comprehensive plan from catchment to consumer that encompassed risk assessment, risk management and developing strategies to ensure appropriate corrective measures and monitoring activities are carried out to ensure safe water is consistently supplied.

Work at the community level to encourage behaviour change and increase demand for safe water technologies.
This participatory approach can foster a strong sense of ownership and commitment to enhancing water quality practices. Working to increase demand at the community level also creates important leverage for encouraging investment in WASH businesses and advocating government representatives for improved water quality and water supply systems.

Create opportunities to link community members and government stakeholders with WASH entrepreneurs to build shared momentum for improving WASH practices and services.
Through hosting a community fair (a WASH Mela), community members and government officials became more knowledgeable about the WASH products and services available from local entrepreneurs, sparking further interest in investing in improving water quality.

Link WASH businesses and entrepreneurs to community-level financial institutions.
Small WASH businesses may not initially have the funds to sufficiently invest in purchasing stock, especially from more distant suppliers, in order to achieve economies of scale. Linking businesses to financing institutions can help to ensure that WASH businesses are able to offer a diverse portfolio of products to community members at affordable prices.

Access to quality water testing labs is an important element of monitoring and improving water quality. Supporting the development of mini water testing labs can help to ensure more regular water testing in remote locations.
The programme found that setting up mini labs near to the programme sites was helpful for monitoring progress along the JMP ladder and encouraging municipalities to engage in more regular water testing.

Consider the sustainability and business viability of mini labs for water testing when supporting the development of mini labs.
In order for the mini lab to continue without programme support, there must be sufficient demand for lab services and the continued availability of trained personnel. Working with the local government to increase the requirements for water testing and developing more flexible standards for regulating mini water quality labs could be important to ensure that mini labs continue to operate and flourish.

A system strengthening mindset must be adopted to improve sustainable access to safely managed water.
Efforts to improve access to water often focus primarily on infrastructure development while overlooking the mechanisms, policies and human resources need to be established in order to ensure the sustainable delivery of safely managed water services. To effectively improve the utilization of safe water in the long-term, the whole water system must be considered, including the local demand for water, the affordability of quality water services, the accompanying private market products and services, a supportive regulatory framework, and the establishment of financial arrangements to support ongoing management, repair and maintenance.

Ensure that efforts to develop policies, financial arrangements and monitoring regulations are participatory process involving diverse stakeholders from the community, especially those who are usually excluded from these forums.

Work with relevant government stakeholders to ensure that the necessary policies, financial arrangements, and monitoring regulations are in place and implemented to ensure the provision of safe drinking water.
In this programme, one of the key initiatives was to assist local governments with developing their WASH plans as it serves as a framework for at the local level for coordinating investments, planning and implementing safe water objectives.

Raise the profile of safely managed water provision with local governments by advocating for the establishment of formal WASH focal points or units.
The programme was able to successfully advocate for the establishment of dedicated WASH units in a number of the working areas and also provide capacity building for those newly appointed staff. These positions were helpful for having a centralized person or body to hold the responsibility for WASH decision-making and supporting the implementation of WASH activities.

Leveraging WASH investments through blended financing models such as revolving funds and public private partnerships are an effective way to bring additional WASH financing.
The programme was able to successfully introduce a revolving fund to support water supply systems in upgrading their services. These alternative financing models support in reducing the reliance on the already stringent local government budget.


WASH
SDG
programme