



Nepal Status of Work Evaluation - 2023

A SUMMARY OF FUNCTIONALITY, SATISFACTION AND WATER KIOSK ACTIVITY

Nepal was Splash's second country of focus after China, and the first with a target of 100% coverage for a single city. Centering our activities in the capital city of Kathmandu, Splash's goal was to ensure comprehensive WASH at all schools in the city and surrounding valley. In Splash's body of work across eight countries, the water quality issues in Kathmandu represent the most difficult challenges we have faced. Not only did most schools use wells for their drinking water purposes, which in Kathmandu are often shallow and full of iron, but they are also [heavily polluted from urban runoff](#).

Splash launched a local NGO, Splash Nepal, in 2011 in hopes of establishing a strong proof of concept for our 100% coverage model in one of the poorest cities in Asia with some of the worst water quality in the world. By the time of the earthquake in 2015, Splash's local office had a staff of more than 30 and the NGO was actively working in nearly half of all schools in the Kathmandu valley. However, in 2016, internal concerns from the Splash Nepal team about financial controls and questionable governance came to light and nearly overnight we brought all growth operations to a halt. You can [read more here](#).

Upon notice that Splash International would halt operations, a split happened in the local organization. Splash established an INGO office and maintained six former staff while a new entity was formed, Prabhav Nepal, from the former local NGO. This latter organization held local accreditation and legal ownership of all spare parts and supplies Splash was warehousing for the coming years. While we were not growing with that organization, we did have to continue working with them to fulfil grant obligations with donors and MOUs with schools.

In 2019, Splash shut down the INGO office within Nepal and transitioned to executing and maintaining our work via SmartPaani, a local social enterprise. To date, some schools maintain a close relationship with SmartPaani while others continue working exclusively with Prabhav Nepal, as well as many schools who continue working with both. This is suboptimal, though it does provide some semblance of choice for many institutions.

In 2022-2023, Splash conducted an evaluation including all sites in Kathmandu where Splash had installed Antunes water filtration systems, drinking water stations, and water kiosks between 2007 and 2019. The primary objective of this survey effort was to evaluate the sustainability of infrastructure and to better understand school administration's satisfaction with maintenance providers Splash had linked them with as part of the original program.

The survey was conducted between November 2022 and May 2023 and covered a total of 218 schools, including 12 schools that had water kiosks operating at some point, in addition to one hospital and one shelter.

The primary objectives of this evaluation effort were to assess the following:



1. **Satisfaction with maintenance providers:** gauge the level of satisfaction with the providers responsible for maintenance, based on cost and service level quality.
2. **Cost and sustainability of infrastructure maintenance:** evaluate the financial burden associated with maintaining the WASH infrastructure to better understand the sustainability of ongoing maintenance efforts.
3. **Infrastructure functionality over time:** assess the functionality of various components of the Splash-installed infrastructure over time, including potential points of failure in key areas of pre-filtration, filtration, drinking stations, water storage tanks, and plumbing.
4. **Water Kiosk status:** provide an update on the status of water kiosks, including their operational functionality and common challenges faced.

With these objectives in mind, Splash aimed to gather insights into the effectiveness and sustainability of its initiatives in Nepal so to improve program design in other countries where Splash can have an evidence-based exit strategy from the onset.

METHODS

Splash developed and deployed a survey tool using CommCare software. The survey consisted of interview questions for the school administration, enumerator’s observations, and, for schools with water kiosks, interview questions for Kiosk operators or school administrators. Tableau was used for data cleaning, preparation, analysis, and visualizations.

Table 1: Observations included in Evaluation

Total # of Surveys	220
- Schools	218
- Shelters	1
- Hospitals	1
- Sites w/ Filters	220
- Sites w/ Water Tanks	219
- Sites w/ Pre-Filters	75
- Sites w/ Drinking Stations	195

FINDINGS

Satisfaction with maintenance providers

We expected to see sites exclusively using either Prabhav Nepal (for earlier sites) or SmartPaani (for later implementations) as their maintenance provider, but instead, over half of schools are contacting both providers for maintenance needs. SmartPaani emerged as the preferred maintenance provider for most sites, with a high satisfaction rating – see Figure 1. SmartPaani provides more satisfactory service compared to Prabhav Nepal. 79% of respondents are satisfied with the support from SmartPaani, with



the remaining respondents claiming partial satisfaction.

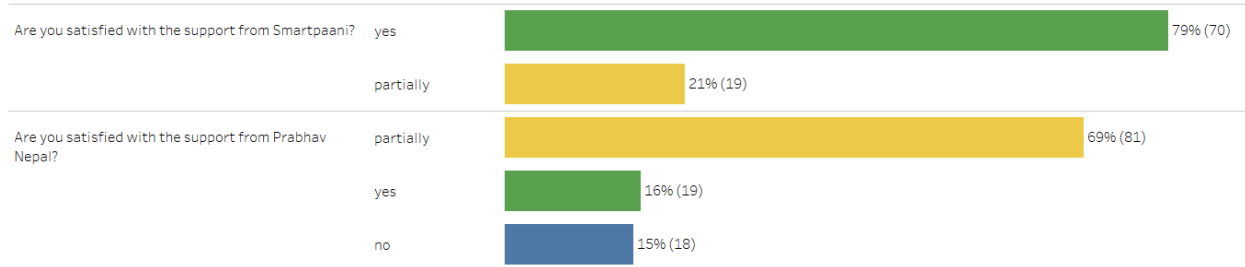


Figure 1: Satisfaction with Maintenance Providers

In contrast, only 16% of respondents who utilized Prabhav Nepal expressed satisfaction, while 15% reported being unsatisfied with the services provided. The top complaint is that Prabhav Nepal is slow to respond to the maintenance requests.

Among those exclusively using SmartPaani, 90% prefer to continue with SmartPaani for future maintenance. Among current users of Prabhav Nepal, 89% (32 individuals) prefer to switch to both providers, while only one administrator prefers to stick with Prabhav Nepal.

Cost and sustainability of infrastructure maintenance

Maintenance needs are frequent, and the charges vary considerably by the maintenance provider. Approximately 76% of the sites request maintenance twice a year – see Figure 2. An additional 8% of sites require maintenance three or more times a year, highlighting the higher demand for upkeep in certain locations.

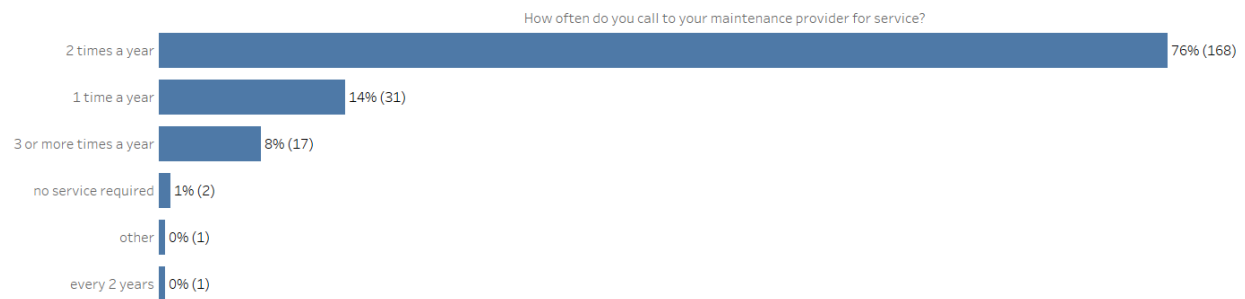


Figure 2: Maintenance Frequency

Most sites (76%) do not incur charges for service visits. Compared to Prabhav Nepal, SmartPaani is more likely not to charge for either service visits or parts, offering a more cost-effective solution for the sites. In the latest service visit, 74% of respondents using Prabhav Nepal reported paying for the visit, while only 7% of those utilizing SmartPaani had to pay.



Based on 33 surveys from those who usually pay for a service visit, the average payment for a service visit is 1,727 NPR (USD 13). There were no responses on SmartPaani visit charges even though 6 of 88 sites reported paying for the latest SmartPaani visit. However, most sites (66%) pay for the parts, which are most commonly pipes and fittings, station taps, pumps and other electric parts.

Most sites are concerned about having enough funds allocated for maintenance and being unable to afford the costs associated with unexpected filter malfunctions on short notice. As part of the Splash sustainability plan in Nepal, schools were encouraged to open a bank account specifically designated for maintenance expenses. Based on the survey results, 34% of the surveyed sites reported having a bank account set up for this purpose, but only 47% used the account for paying for WASH maintenance purposes. Additionally, 13% of sites are confident they could cover the full cost of filter repair on short notice. Most sites have concerns about having sufficient funds (79%) or lack funds completely for this purpose (4%).

Infrastructure functionality over time

The main question the evaluation sought to answer related to functionality was: what are the issues, from water coming into building to the kids accessing clean filtered water? What are the most common points of failure in the 'chain': water storage -> prefiltration -> filtration -> drinking station as well as plumbing across all elements. Overall, we found that children could drink clean water from at least one drinking station at 81% of sites (157 out of 195) on the day of the site visit. Functionality estimates for each link in the chain are presented below. Some responses were affected by construction in progress at some sites, making the functionality assessment difficult.

- **Water tanks:** 100% of 219 water tanks are functional.
- **Pre-filter:** Some locations in Kathmandu require water to be pre-treated from iron before the water reaches an Antunes filtration system. 80% of 70 such pre-filters are functional. Most common issues are parts needing replacement and broken pipes and fittings.
- **Filter:** 78% of 220 Antunes filters are functional. 26 of 48 non-functioning filters were offline due to construction at the site or otherwise inaccessible, making a true functionality assessment difficult and unreliable. The second most common issue found in non-functioning filters was reported as "water not flowing due to functionality issue." These functionality issues had to do with filter membrane, booster pump, and other key parts needing replacement before a filter can be used again (80%). In addition, at two schools a pre-filter must be installed to capture iron or sand before attempting to replace parts on a Splash filter.
- **Plumbing:** Plumbing is functional at 81% of 220 sites where it was assessed. Plumbing issues most observed were at the drinking station (49%), at the filter (18%) or occurring somewhere between the two (17%).
- **Drinking Stations:** 81% of drinking stations are functional. The most common issue for non-functional stations is a lack of water due to no water being in the tank or construction occurring



at the site. Even when a station is functional enough to provide clean water to a child, some issues were encountered for such stations as well. The most common problem is broken taps.

Water Kiosk Status Update

In hopes of creating some independence for schools, while also trying to be creative about increasing safe water access in the homes of students, Splash designed a pilot to test out the creation of kiosks on the grounds of schools. These kiosks would leverage the same treatment systems Splash had already deployed and build a storefront near the entrance of the school to sell water before schools opened and after they closed to the surrounding community. In doing so, our intent was to create enough revenue on site that schools could pay for the long-term services needed to keep equipment running. With a full-time operator on site, repairs would be timely and more proactive. Also, we assumed schools would be more engaged with functionality and ownership. That, and we could start to tackle the question of, “what happens when kids go home to unsafe water”.

Splash established 17 water kiosks at schools in Kathmandu. 12 of them were equipped with Antunes filtration systems, and the remaining five had Aquasphere filters. Our recent survey focused on the status of the 12 kiosks using Antunes filters.

Of the 12 kiosks, eight are currently non-operational, and of those, five are no longer physically accessible with closures occurring between late 2019 and late 2021. The Covid pandemic contributed significantly to the closure of kiosks and/or the prevention of their reopening in all eight non-operational kiosks. Other contributing factors include insufficient demand (mentioned in five sites), challenges in finding kiosk operators (mentioned in three sites), inability to deliver water door-to-door (mentioned in two sites), and buyers' mistrust in water quality (mentioned in one site).

Four of the original 12 kiosks are actively selling water, with three of them operating six days a week and one open just one day a week. Among the kiosks interviewed, two reported no issues, while the operators of the other two mentioned concerns about low demand and the need for regular water quality tests to address customer inquiries.

Sales amounts in the past 30 days varied widely among the operating kiosks. A Kiosk operating once a week reported sales of 1,500 NPR (USD 11) per month, while those open six days a week had sales ranging from 4,600 NPR (USD 35) to 11,460 NPR (USD 87) to 15,000 NPR (USD 114) per month.

RECOMMENDATIONS

- Share results with SmartPaani, inquire on their cost and revenue structure, and if Smartpaani has informed the schools of the lifecycle costs.
- Recommend SmartPaani use report results to invite more schools to get maintenance service from them instead of Prabhav Nepal.