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# *Splash*

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## ***Goldilocks Toolkit***

*Innovations for Poverty Action*

*[poverty-action.org/goldilocks](http://poverty-action.org/goldilocks)*



Right-fit monitoring and evaluation (M&E) systems embody the principles of Credible, Actionable, Responsible, and Transportable, or CART. In the Goldilocks case study series, we examine the M&E systems of several innovative organizations and explore how the CART Principles can work in practice.

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# Splash: Finding the Right Timing for Impact Evaluation

Lack of safe drinking water, inadequate sanitation, and poor hygiene contribute to poor health outcomes for children in many countries across the world. Based in Seattle, WA, the NGO Splash provides safe water and hygiene education to approximately 290,000 children in schools and orphanages in urban areas of Asia and Africa. Splash provides urban institutions with water purification systems, teaches children about hygiene, and also works to make safe water provision sustainable by working with local partners to scale up its programs. The program started in 2007 in Cambodia, China, and Nepal and has since expanded to Ethiopia, India, and Thailand.

Splash is eager to learn about the impact of its program on the health and development of schoolchildren through a rigorous impact evaluation. Before an organization can measure its impact, however, it is important it has a strong monitoring and evaluation system

in place, and as of 2015, when this analysis was completed, Splash's M&E system was still under development. In these early stages, we recommend that organizations understand whether their program is operating as planned. This means developing a strong framework to track implementation—which enables organizations to show accountability to donors and quickly identify and resolve issues. Given the technical and

organizational requirements for carrying out a high-quality randomized evaluation, we recommend that Splash further develop its monitoring system before conducting an impact evaluation.

If the organization decides to pursue an impact evaluation, the next step would be to use its monitoring data to identify the most important impact or operational questions to research.



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# *What They Do*

Splash provides clean water to children in urban areas of developing countries. The organization uses a three-pronged approach: i) the provision of water purification systems to schools and other urban institutions, ii) hygiene education through child-centered programs, and iii) scale-ups through a partnership model focused on sustainable safe water provision through local entities.

## *Safe water*

Safe water provision is the backbone of Splash's work. As such, the organization's primary activity is to provide water purification systems to institutions serving children. These systems are specifically designed to produce enough clean water for institutional use in areas

with very poor water quality, and they are also designed to be easily scaled-up.<sup>1</sup>

As a partnership-based model, Splash works through local institutions that operate and maintain the water systems. A critical component of the model is training staff on-site to maintain the system. On a quarterly basis, Splash staff check that the filtration systems are working properly and that the hand washing and drinking stations are well maintained.<sup>2</sup> The check-ins include visual inspections of the systems, repair and maintenance, and yearly water-quality testing. Splash also provides spare parts for the filter system, such as carbon filters and UV light bulbs, for up to 10 years.

## *Hygiene*

Splash recognizes that increasing access to clean water without proper hygiene practices may not be sufficient for improving children's health and reducing diarrheal illnesses. To address this, Splash implements two-day trainings for special clubs of about 20 students who maintain and promote health and hygiene in schools.<sup>3</sup> Splash uses playful materials and first-hand experiences to teach club members about proper handwashing techniques and some of the main sources of water contamination. After the first year, Splash continues to visit partners to conduct hygiene refresher courses as needed.

The hygiene program continues to develop and refine its approach as the organization learns more about program implementation through regular monitoring.

is creating school-based operations and maintenance funds.

### ***Sustainable Provision***

The goal for schools and partners is to be able to take over maintenance and upkeep of the systems after about 10 years.<sup>4</sup> To support that goal, Splash representatives spend part of their time training school staff on maintaining the systems and providing spare parts.

Sustaining water systems over time is a critical challenge in the water, sanitation, and hygiene (WASH) sector, and Splash is working to ensure that schools can get parts when they need them at a price they can afford. The organization is exploring co-funding arrangements that require schools to collect some of the funding necessary to keep the system up and running once Splash ends their official engagement. And in some countries, Splash is testing social enterprise models for sustainable financial contributions, and

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# *Theory of Change*

Diarrhea is the second leading cause of death among children worldwide, responsible for an estimated 1.5 million deaths of kids under five every year.<sup>5</sup> Splash's work is founded on the theory that expanding access to safe water, training children on proper hygiene, and encouraging local ownership of purification systems will lead to improved health and educational outcomes for children (See the program's theory of change in Figure 1.)

Splash's theory of change has two components\*. First, Splash expects increased access to safe water and

training on proper hygiene and sanitation to increase the practice of drinking safe water among children in urban settings. Hygiene education is expected to improve knowledge, motivation, and attitudes among children regarding proper hand hygiene practices, and improved hygiene is expected to have a variety of positive education and health impacts on these children.

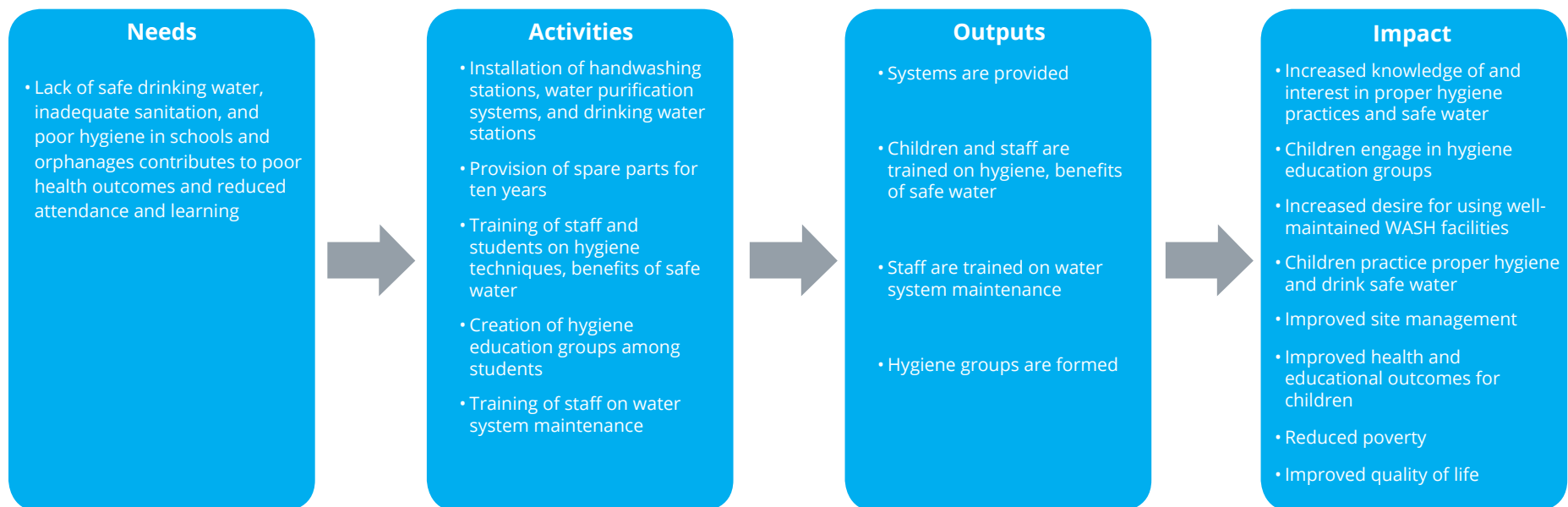
Specifically, Splash expects to see increased enrollment and attendance at participating schools and reduced dehydration during the day. Most importantly, diarrhea should decrease,

which in the long term will lower child mortality, reduce stunting and wasting, and allow students to perform better in school. Splash believes that the provision of water and hygiene education will translate into better hygiene practices in the home and the community as well.

The second part of their theory of change focuses on building a scalable model of water provision for their partners and other institutions. Splash will know their model is working if other organizations adopt their model of provision and education.

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\*Please note that all analyses contained within this case study are based on Splash's 2012-2015 theory of change and M&E systems.



**FIGURE 1. THEORY OF CHANGE\***

\* Organizations use a variety of methods to present their theories of change. To standardize our discussion of these cases, we present our own simplified version of Splash’s theory of change here. Please see Figures 2 and 3 in the Appendix for the organization’s full versions.

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# *Measuring Impact*

Splash is committed to transparency and to engaging in high-quality measurement of its activities and impact. From the start, the organization has been interested in conducting an impact evaluation to measure whether they are reaching their goal of improving children's health and education.

However, the Splash model has multiple program elements and involves working with a large number of diverse institutions to deliver water and education services. Before embarking on an impact evaluation, the organization needs to continue solidifying their program model and track whether the assumptions in the theory of change appear to be holding up in practice.

The first challenge for Splash is to set priorities around what steps in the theory of change can be monitored at this stage of program development.

In the meantime, there are a number of other WASH studies that are in process. If other institutions are producing evidence of effectiveness relevant to Splash's program, the organization may not need to conduct a separate impact evaluation of its program.



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# Activity Monitoring

## Vetting Partners

A key component of the theory of change is identifying appropriate institutional partners and developing a sustainable business model. The selection process involves a vetting survey to assess whether the interested schools or orphanages meet the technical and management requirements for maintaining a water filtration system. Technical criteria include sufficient electricity and water flow and certain water characteristics. The technical specifications must be met for the project to move forward.

Management criteria include a requirement that the institutional

management demonstrates a commitment to maintaining the filtration system and implementing hygiene practices and education at their institution. If there are weaknesses in this area, Splash may work with institutions to build capacity and support. If the project is not ready (usually due to not meeting technical requirements), Splash offers recommendations and comes back in a year.

## On-going Monitoring

Once an institution enters the program, Splash installs water filtration systems, trains staff, and hygiene education

begins. Splash then engages in ongoing monitoring through site visits in which staff collect information on the functioning of the filtration system, the status of the handwashing and drinking stations, and the cleanliness of toilets. The checks include visual checks and water quality tests.

This information is used in two ways: first, basic data on system functioning is uploaded to an online data management platform called proving.it. The proving.it system was developed by Splash to demonstrate transparency to donors by providing public data on project status at each site. Second, Splash stores the more

detailed information in Excel databases for staff to use for program management and reporting.

## Measuring Hygiene Practices

A key assumption of the theory of change is that hygiene education programs will change student knowledge and behavior. Splash is using three methods to track take up of hygiene practices and engagement with the hygiene curriculum: a baseline and endline hygiene survey of children, a pre-post knowledge survey, and a structured observation of behavior at partner institutions. Splash is also considering the use of focus groups<sup>6</sup> and is planning to create their own survey tool for tracking social norms around hygiene among student populations.<sup>7</sup>

The hygiene surveys collect information about the demographics of the school and tracks the cleanliness of toilets and handwashing stations before and periodically after the Splash program (quarterly for one year after a training since the hygiene program operates on a much shorter time horizon than the

clean water system). Before and after surveys often cannot provide a credible measure of impact because of the lack of a counterfactual. In this case, however, measuring the cleanliness of toilets and handwashing stations provides an important measure of project uptake and engagement and helps to validate the theory of change.

Splash also plans to administer knowledge surveys based on the training curriculum to members of the hygiene clubs before the trainings, as well as just after and again several months later. By comparing the differences in knowledge between hygiene club members and other students, Splash can learn whether hygiene club members gain knowledge from the trainings and are able to transmit hygiene information to their peers.

Results of this survey will also help Splash learn what information students are not retaining or sharing with their peers. Splash plans to emphasize this information in their hygiene activities the following year. This exercise validates another important assumption in the theory of change: that hygiene club

members will retain knowledge and be able to transmit it to their peers.

Finally, Splash measures the overall rate of handwashing in schools a few months after the training using structured observation. Recognizing that children may change their behavior if they know they are being observed (called the Hawthorne Effect), monitors visit schools during a break and stand in a corner to observe students washing hands. Hundreds of students wash their hands during the break, providing a good estimate of rates of handwashing at the school.

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# Goldilocks Recommendations

Splash has a program model supported by a solid theory of change and a commitment to high quality data and transparency, which will guide the development of the M&E systems as the program evolves. The monitoring system is moving quickly from the design to implementation stage and is already quite sophisticated for being so early in its development. **In the near-term, we recommend that Splash focus on developing the actionability and credibility of current monitoring efforts in order to validate and adjust their model, rather than pursue an impact evaluation of the program at this stage.**

## Credible: Collect high quality data and accurately analyze the data.

Splash's leadership has a strong interest in measuring the impact of their program on the health and development of children in schools as well as educational outcomes such as attendance. Since the program is scaling in Nepal and other countries, there might be an opportunity to randomize its roll-out across sites to create a valid counterfactual. But the sample size required for an impact evaluation remains an important concern – current growth plans in Nepal may not include a sufficient number of schools for treatment and comparison groups. Given that Splash extensively vets schools to be sure that they are ready

for the system, Splash might have to relax some constraints around overall site capacity to create a large enough sample for a randomized evaluation. Making these changes to create a large enough sample would require a clear operational sacrifice and may not be entirely feasible.<sup>8</sup>

Before undertaking an impact evaluation, Splash will also need to decide how far down their theory of change they need to measure. If the most important outcomes are children's health and education, these are mediated by household factors and Splash will need to conduct household surveys in addition to education and health outcomes for individual students. This would add substantially to the costs and complexity of an evaluation. Data on education and school performance are

relatively easy to collect and even health information could be collected at schools, but understanding home hygiene practices might involve visits to children's homes.

### **Actionable: Commit to act on the data you collect.**

Splash should continue to develop the monitoring system to ensure that the organization can quickly learn whether programs are operating as intended. In addition, focusing data collection on program implementation and curriculum can help staff understand whether any failure is due to implementation challenges, curriculum weaknesses, or some other factor.

The Splash system of monitoring is still young, and figuring out what data to collect to support program improvement is a clear challenge.

For water filtration, the goal is to collect information to help track the functioning of the systems over time so that they have clear and objective feedback about the quality of implementation at partner schools. As set up, however, the

information uploaded to the proving.it system is generally incorporated as text and therefore difficult for managers to extract and analyze. Splash is currently developing a second version of the proving.it system that will provide a way to capture data for internal programmatic use, making them easier to access and more actionable.

On the hygiene side of the program, the challenge for Splash is to manage the large amount of data collection around behavior change. Some of the measurement efforts are exploratory research activities designed to inform program implementation in new areas, but the M&E team should also carefully consider whether hygiene behavior (such as handwashing behavior) is meaningful to measure without a plausible counterfactual. Splash could continue collecting this data to validate its theory of change, as long as the organization is careful not to make claims about impact.

### **Responsible: Ensure the benefits of data collection outweigh the costs.**

Since the organization is still building the

very fundamentals of data collection, conducting an impact evaluation might violate the responsibility principle by consuming too many resources for a small M&E department and pull attention away from critical monitoring tasks. In the meantime, Splash is tracking research efforts by other organizations and reviewing existing evidence for similar WASH programs to assess the extent to which their program is similar to others that have been or are being rigorously evaluated. If good evidence exists on links between handwashing and health outcomes, for example, the need to spend a large amount of resources to measure impact could be reduced.

### **Transportable: Collect data that will generate knowledge for other programs.**

The commitment to high quality data collection and transparency about its data collection and theory of change will help the organization develop lessons for new programs and potentially for other organizations.

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# *Lessons for Others*

## **1. Monitoring systems should focus on validating key elements of the theory of change.**

In particular, monitoring data on take up and engagement can help inform ongoing program design.

## **2. Develop a credible, actionable monitoring system before you evaluate.**

In the early phase of building a monitoring system, an organization is often not well placed to conduct a rigorous impact evaluation. An evaluation

is likely to distract from the development and refinement of critical monitoring tasks.

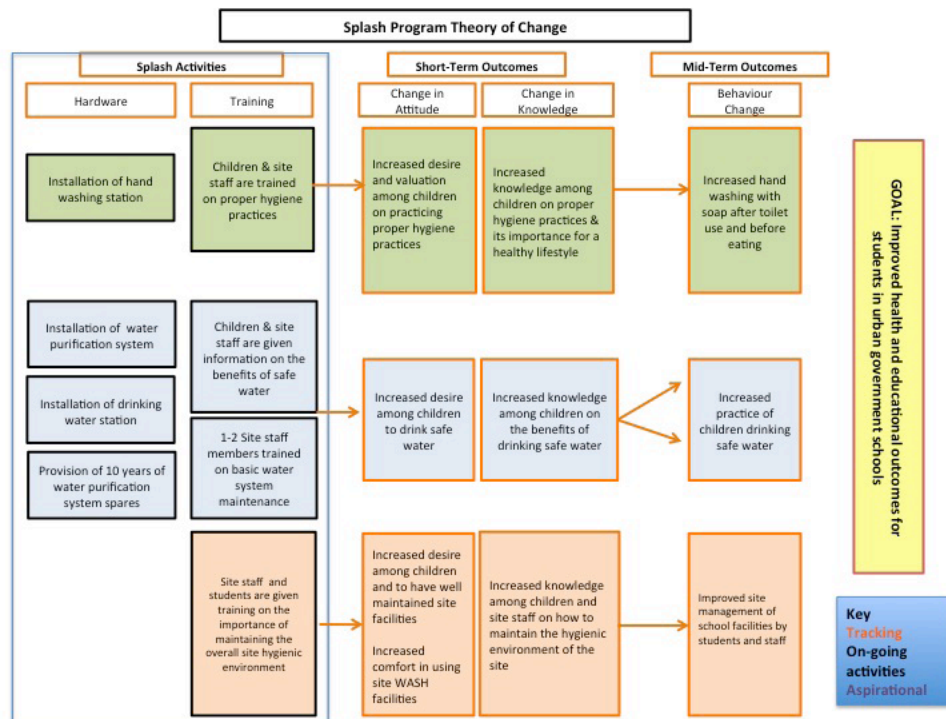
## **3. Credible data can position an organization for a well-designed impact evaluation.**

The first goal of an M&E system is to gather credible data on program implementation. When and if the time is right for impact evaluation, this data can inform the evaluation design and help pinpoint the most relevant research questions

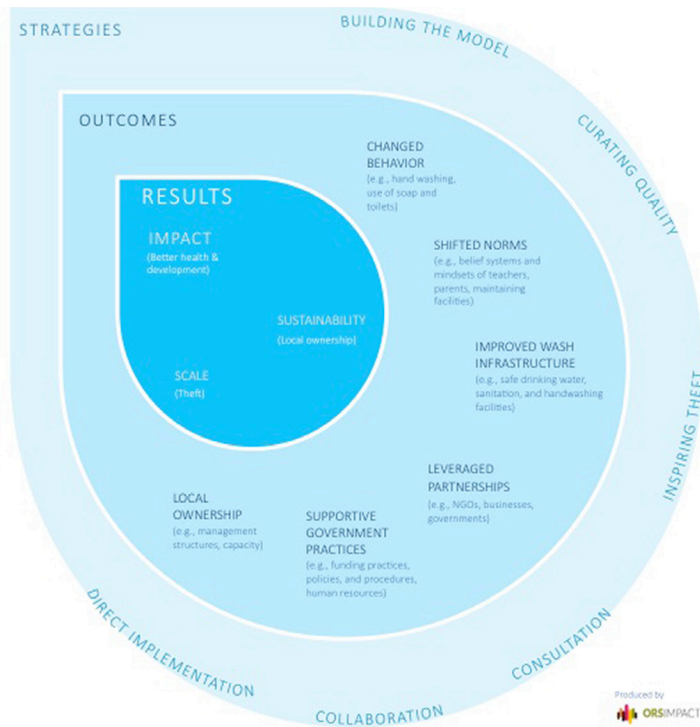
## **4. Review existing evidence first.**

Before embarking on an impact evaluation, organizations should first look at literature that is relevant to their program. Evidence may already exist on similar programs that may enable them to estimate their impact.

# Appendix



**FIGURE 2. SPLASH THEORY OF CHANGE 2012-2015\*** \*This is the organization's previous theory of change.



**FIGURE 3. SPLASH THEORY OF CHANGE 2016-2020\*** \*This is the organization's draft theory of change for the next five years.

## Endnotes

1. Although the system varies slightly by country, the filters typically consist of a UV filter (to kill the larger pathogens first), of a membrane filter, and a booster pump as Splash often works in areas that draw water from gravity fed-tanks, which may not reliably provide water at high enough pressure (particularly during the dry season) to run the Splash system.
2. To ensure that water systems are working properly in between site visits, Splash staff provide contact information to people at the sites and strongly encourage them to report any problems with the water system or water stations. Currently, the phone systems do not have enough information to know whether school staff are actually reporting issues with filters.
3. Every country has their own way of structuring clubs. In India, the club is called the Child Cabinet and reflects the overall setup of the Indian Government, with Prime Minister, Health Minister, etc. In Nepal, the clubs are called SAFAR clubs, which focus on promoting good health practices in the schools.
4. This is slightly varied by country – all countries except China (where the goal is five years) receive the provision of 10 years of spare parts.
5. Unicef. (2010). Diarrhoea: why children are still dying and what can be done. Available at: [http://www.who.int/maternal\\_child\\_adolescent/documents/9789241598415/en/](http://www.who.int/maternal_child_adolescent/documents/9789241598415/en/).
6. Conducting focus groups among children can be difficult, and Splash will pilot the groups to learn if they are a credible way to get information about the barriers to good handwashing practices.
7. Previously, Splash relied on the Risk, Norms, Attitudes and Self-regulation (RANAS) survey to gather opinions about risks and attitudes that drive handwashing behavior but found the survey to be ineffective.
8. Alternate designs also have issues. It would be hard to randomize within schools, as it would be hard to only give clean water to half the student body. The same is true for the handwashing campaign, as the program is premised on positive spillovers (that club members will tell others in the school about the benefits of strong hygiene practices) so there's no real control in the school with hygiene trainings that isn't supposed to hear the message.