



Hygiene promotion in Bhutan: Does it work and at what cost?

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Unless improved water and sanitation services are used hygienically, health and socio-economic benefits will not be realised. To encourage people to improve hygiene behaviour, many hygiene promotion activities are being developed and carried out worldwide. Yet we have limited knowledge of financial benchmarks for water and sanitation improvement and even less for hygiene improvement.

Planners and policy makers still face questions on the need for hygiene promotion, such as:

- why invest in hygiene promotion?
- what works, where and why?
- how much is enough?
- how do we know if, and to what extent, inputs are achieving outcomes?

This research brief shares the outcomes of a hygiene effectiveness study designed to help determine the costs and efficacy of WASH-related hygiene promotion interventions conducted in Bhutan. The study sought to capture levels of behaviour change using an effectiveness ladder (*table 1 on next page*) and the costs of hygiene interventions, and compared costs against behaviour change. Three key hygienic behaviours were examined: handwashing with soap at critical times, hygienic usage of a sanitary toilet and safe water management practices.

Findings indicate that government-led programme district-wide investment of US\$ 3.5 per person or US\$ 17.50 per household has led to significant increases in safer practices in sanitation, handwashing with soap and household drinking water management.

Background

The study was conducted by SNV, IRC and the Public Health Engineering Division (PHED) to support the Ministry of Health's efforts to strengthen and scale up its Rural Sanitation and Hygiene Programme (RSAHP), which

is based on SNV's SSH4A approach. It was implemented over a four-year period across the districts of Samtse (from 2014) and Trashigang (from 2016). Applying IRCs WASHCost methodology, the study assessed the

Inside Sustainable Sanitation and Hygiene for All (SSH4A)

SNV's Sustainable Sanitation and Hygiene for All (SSH4A) programme supports local government to lead and accelerate progress towards district-wide sanitation and hygiene services with a focus on institutional sustainability and learning. The SSH4A approach has four integrated components supported by performance monitoring and learning. Developed since 2008, SSH4A is implemented as part of government-led rural sanitation programmes across 19 countries in Africa and Asia.



Table 1: Hygiene effectiveness ladder

	Sanitary toilet and use	Handwashing with soap	Safe drinking water management
Improved	Household (HH) has own toilet that: <ul style="list-style-type: none"> • is used, • separates users from faecal matter, • is accessible by all HH members, and • is hygienic (free from faecal matter). 	There is a handwashing facility within 10 m of toilet facility that: <ul style="list-style-type: none"> • has water available, • has soap available, and • prevents contamination of the water by hands. HH members know two critical times for hand-washing (before eating and after defecation).	Drinking water always comes from an improved source (piped or protected spring) and is: <ul style="list-style-type: none"> • collected safely, • stored safely, • drawn in a safe manner, and • treated before use.
Basic	HH has own toilet or use of shared toilet: <ul style="list-style-type: none"> • that is used as toilet, • separates users from faecal matter, but • is NOT accessible by all HH members, nor • hygienic (free from faecal matter). 	There is a hand-washing facility within 10 m of toilet facility that: <ul style="list-style-type: none"> • has water available, • has soap available, and • does not prevent contamination of the water by hands. But HH members do NOT know two critical times for hand-washing (before eating and after defecation).	Drinking water always comes from an improved source (piped or protected spring) and is: <ul style="list-style-type: none"> • collected safely, • stored safely, • drawn in a safe manner, but • is NOT treated before use.
Limited	HH has own toilet or use of shared toilet that: <ul style="list-style-type: none"> • is used as toilet, but • does NOT separate user from faecal matter. 	There is a hand-washing facility within 10 m of toilet facility that: <ul style="list-style-type: none"> • has water, but • does NOT have soap or substitute available. 	Drinking water sometimes comes from an improved source (piped or protected spring) but is not: <ul style="list-style-type: none"> • treated before use, • collected safely, • stored safely, nor • drawn in a safe manner.
Not Effective	No toilet or toilet not used (HH practice open defecation).	There is no hand-washing facility within 10 m of toilet facility OR water is not available (at present).	Drinking water comes from unimproved source: surface water OR unprotected spring OR unprotected dug well.

Note: Parameters for the hygiene effectiveness ladder were developed with stakeholders for all four levels: improved, basic, limited and not effective.

effectiveness of the RSAHP hygiene interventions in encouraging safer practices and how much these had cost. It examined district-wide hygiene interventions delivered through the government’s health services, including: two-day Community Development for Health (CDH) Workshops to create demand for sanitation and hygiene; home visits and regular follow-ups; review meetings with district and sub-district officials; and awareness raising campaigns during annual events (e.g., Global Handwashing Day).

How was data collected?

Before interventions commenced, baseline data was collected from 390 out of 11,867 households in Samtse in 2014 and 386 out of 10,954 households in Trashigang in 2016, as part of SNVs annual household surveys (*figure 1 on next page*). While the CDH workshops are designed by the government to be carried out once, at the start of an intervention, follow-up activities are carried out over two-year periods. In 2018, an endline assessment

was carried out to measure the progress made in both districts. Table 2 presents the costs captured by households and implementers.

Table 2: What costs are captured?

Households
<ul style="list-style-type: none"> • Cost of material and labour incurred in building a toilet • Cost of soap • Cost of water installation and use
Implementers
<ul style="list-style-type: none"> • Time (and thus salary) spent on planning, preparation, training of health workers, coordination and facilitation • Travel costs: driver costs, allowances, fuel, car rental and daily subsistence allowances (DSA) • Other costs, e.g., printing materials

Flow charts were developed for each indicator to track progress on intermediate steps and to allow for a change of focus within the intervention when needed.

Figure 2 (next page) shows an example of the flow chart for sanitary toilet access and usage, which was developed with key stakeholders at the start of the programme. The first number indicates the endline, for example, 708 households were found to have a toilet at endline compared to 578 households at baseline (the second number). Similar flow charts were developed for handwashing with soap and safe drinking water management.¹

Findings (2014-2018)

Table 3: Improvements in achieving basic service levels and above

Samtse
Sanitary toilet access and use increased by 33%
Handwashing with soap increased by 24%
Safe drinking water management increased by 45%
Trashigang
Sanitary toilet access and use increased by 46%
Handwashing with soap increased by 20%
Safe drinking water management increased by 15%

Costs² related to the three behaviours

Household investment

Cost of toilet

The average amount spent by households with a toilet that is up to two years old:

- toilet materials = BTN 15,750 (US\$ 237), and
- labour = BTN 5,750 (US\$ 87).

Cost of handwashing facility

- On average, a household spent BTN 1,925 (US\$ 29) Thon a handwashing facility.

Cost of soap

- On average, a household spent BTN 15 (US\$ 0.23) on buying a piece of soap and used nine pieces of soap per month, so the average HH cost for soap/month: $\text{BTN } 15 \times 9 = \text{BTN } 135$ (US\$ 2).

Cost for water

- Twelve percent of households in Trashigang and 21% in Samtse paid for the connection or installation of their own water system, with average cost of BTN 9,950 (US\$ 150). Seven percent of households in Trashigang and 53% in Samtse paid for their own water supply.

Figure 1: Data collection process

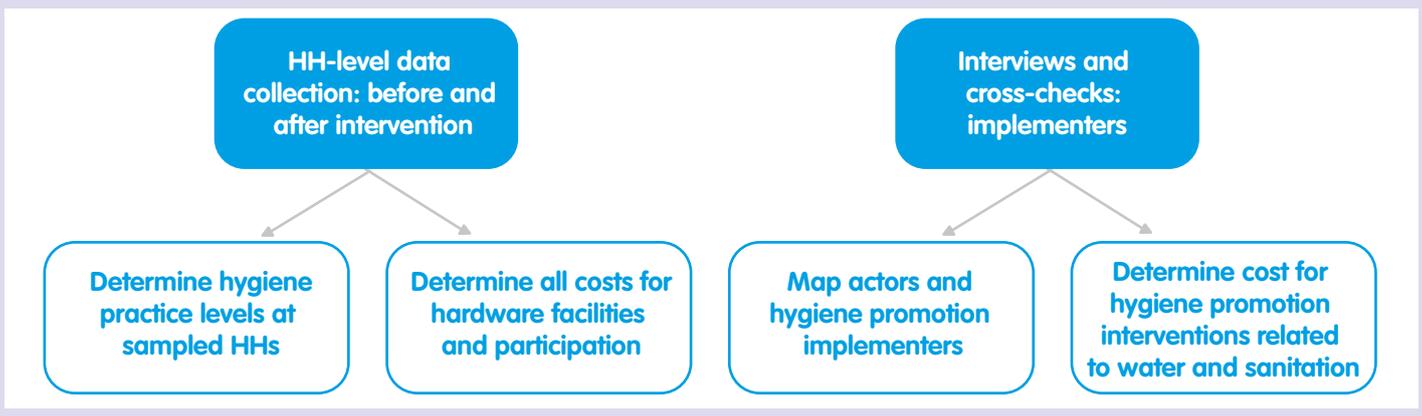


Figure 2: Flow chart example for toilet access and usage



Source: IRC and SNV, 2014

Figure 3: Basic service levels and above in Samtse and Trashigang



Implementer costs

The analysis of government RSAHP spending and SNV's SSH4A support both to the national programme and in both districts found that a district-wide investment of US\$ 3.3/person or US\$ 17.50/household resulted in a significant increase in safer practices. Costs calculated not only included travel and out of pocket expenses, such as printing materials, but also time – and salaries – of programme advisors, government officials, NGOs and consultants for specific tasks, e.g., formative study design. It did not include the governments related infrastructure costs for rural water supply. Staff time costs formed the largest part of the total spending (68%).

Discussion

Before the hygiene intervention, households mostly scored *Not effective* or *Basic* for all key behaviours on the hygiene effectiveness ladders. Following the interventions, strong progress was evidenced in each of these measures. Planned and follow-up activities resulted in an increase of 33% for sanitary toilet access in Samtse and 46% in Trashigang. Regular follow-up by implementers at national and district levels, integrated within the broader RSAHP programme, complemented by the motivation and enthusiasm of district health officials contributed to this success.

During the four-year period, household investments increased from BTN 9,981 (US\$ 150) to BTN 15,750 (US\$ 207)³ reflecting also consumer preferences for pour-flush toilets. With an average monthly income in Samtse and Trashigang of BTN 4,959 (US\$ 65³), increasing costs may present challenges for the poorest households.

For handwashing with soap, Samtse and Trashigang showed similar increases of 24% and 20%, respectively. Improvements were evident at all steps: more

handwashing stations, more with water and soap present, and more people knowing the two critical times for handwashing. In Trashigang, where progress was made within a shorter period of time, innovations in behaviour change communications, developed with the London School of Health and Tropical Medicine, may have contributed to this increase.⁵ CDH workshop designs were adapted to integrate emotional drivers of nurture, disgust and social affiliation, and to place greater emphasis on the critical junctures and settings of a handwashing facility.

Improvements in the safe drinking water management practices (Samtse increased by 45% and Trashigang increased by 15%) are linked to the government's ongoing efforts to improve household access to the rural water supply scheme. The RSAHP does not include intentional interventions around safe drinking water, however, part of the triggering workshop does touch upon the safe consumption of water.

Finally, two thirds of the total cost calculated for these hygiene interventions was staff time. This may indicate the importance of personal contact and frequency of follow-up to promote and sustain safe practices. Findings do not provide insight into the value for each intervention separately, so we cannot conclude which intervention is of better value or which one could be omitted. We assume it is the combination of activities, intensity and frequency, and that a district-wide approach brings economies of scale.

Recommendations

- Share findings and cost analysis with decision makers to support further investment in sanitation and hygiene promotion, and seek alignment with the upcoming decentralisation and budgeting processes in Bhutan.
- Reinforce importance of existing programme approaches and models that seek to institutionalise and integrate efforts within regular activities once demand has been generated, rather than prioritising budgets for one off activities.
- Conduct further studies and monitor and adapt technology options and services to better meet the needs of households that belong to the poorest wealth quintiles.
- In programme design, planning and budgeting, place emphasis on ensuring personal contact and adequate frequency of follow-up to promote safe practices, particularly for handwashing practices, which progressed at a slower pace. The current two-year phase of the RSAHP cycle supports this, but continuous efforts are needed to accelerate progress.

References

Dem, T and Krukkert, I (2018). *Research report: Hygiene cost effectiveness study*. SNV and IRC, Bhutan

Endnotes

- ¹ See the full report for all flow charts.
- ² oanda.com, 31 Dec 2015: 1 BTN = 0,01506.
- ³ Baseline conversion rate by oanda.com, 31 Dec 2015 and endline by oanda.com, 31 Dec 2017.
- ⁴ Average inflation rate is 5.86% for the years 2001 until 2018 (see <https://tradingeconomics.com/bhutan/inflation-cpi>); monthly income is taken from Bhutan Living Standards Survey 2012, calculating income from wage, agriculture and non-agricultural activities and extrapolated with five years of inflation to reach a figure for 2017; Conversion rate by oanda.com, 31 Dec 2017 (See <https://www.adb.org/sites/default/files/publication/30221/bhutan-living-standards-survey-2012.pdf> [last accessed on 8 July 2018])
- ⁵ http://www.snv.org/public/cms/sites/default/files/explore/download/snv_bhutan_research_brief_bcc_2017_0.pdf

SNV

SNV is a not-for-profit international development organisation. Founded in the Netherlands over 50 years ago, SNV has built a long-term, local presence in 38 of the poorest countries in Asia, Africa and Latin America. SNV's global team of local and international advisors work with local partners to equip communities, businesses and organisations with the tools, knowledge and connections they need to increase their incomes and gain access to basic services – empowering them to break the cycle of poverty and guide their own development.

IRC

IRC is an international think-and-do tank that works with governments, NGOs, entrepreneurs and people around the world to find long-term solutions to the global crisis in water, sanitation and hygiene services. With over 45 years of experience, IRC runs large-scale programmes in seven focus countries in Africa, Asia and Latin America and projects in more than 25 countries. It is supported by a team of around 80 staff across the world.

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(FRONT) Mass handwashing at a school in Lhunatse. Photo Credit: Nick Greenfield

More information on SSH4A in Bhutan is available at <http://www.snv.org/project/ssh4a-bhutan> and www.ircwash.org/projects/ssh4a



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