# CASE STUDY

## Scaling up the Oxfam Handwashing Station:

## Promoting handwashing in the COVID-19 pandemic

# CONTENTS

## ACRONYMS

| | |
|---|---|
| **DOAI** | Disability and Older Age Inclusion |
| **FGD** | Focus group discussion |
| **GBV** | Gender-based Violence |
| **HIF** | Humanitarian Innovation Fund |
| **HWWS** | Handwashing with soap |
| **Icddr,B** | International Centre for Diarrhoeal Disease Research, Bangladesh |
| **IDI** | In-depth interview |
| **IDP** | Internally displaced persons |
| **ISDR** | Institut Supérieur de Développement Rural de Bukavu |
| **KII** | Key informant interview |
| **LSHTM** | London School of Hygiene & Tropical Medicine |
| **MMH** | Mum's Magic Hands |
| **OHS** | Oxfam Handwashing Station |
| **PHE** | Public health engineer |
| **PWD** | People with disabilities |
| **UNICEF** | United Nations Children's Fund |
| **WASH** | Water, Sanitation and Hygiene |
| **WEDC** | Water Engineering and Development Centre |
| **WHO** | World Health Organisation |
| **VfM** | Value for Money |

## CASE STUDY SERIES: CONTEXT AND APPROACH

Since 2011, our Humanitarian Innovation Fund (HIF) has been supporting increased innovation practice in the humanitarian system. This case study is one of four that have been produced to evaluate the HIF's portfolio of funded projects. These projects seek to deploy innovative approaches to addressing a specific humanitarian challenge aligned with one of HIF's four thematic funding priorities:

- Humanitarian Water, Sanitation and Hygiene (WASH)
- Gender-based Violence (GBV)
- Disability and Older Age Inclusion (DOAI)
- Accelerating the Journey to Scale

Each case study examines the **impact of the innovation** and aims to identify evidence at two levels:

- Primary:
  - Assessing the project's impact on humanitarian outcomes.
  - Evaluating the project's contribution to or influence on shifts in humanitarian policy and/or practice.
- Secondary:
  - Understanding the project's contribution to increased learning and evidence, driving adoption and scale, and what the Value for Money (VfM) is of the innovation.

They also consider briefly:

- the **approaches and tools** grantees have developed, tested and implemented to innovate in the humanitarian system and address one of the four priority areas
- future **scope, scalability and opportunities** to embed lessons learned and emerging best practices
- **changes, challenges and barriers** during the innovation process and how they can be overcome to inform further innovation.

The case studies seek to contribute to a better understanding of what successful innovation looks like in the humanitarian sector and identify ways to evolve, disseminate and sustain best practices and innovative programming.

### CASE STUDY METHODOLOGY

This case study uses a qualitative approach. It begins with an explanatory analysis framework which looks at existing data and information (secondary data) from documentation such as regular reports submitted to the HIF.

The analysis framework is used to identify opportunities for building on existing information on outcomes using a primary data collection method: key informant interviews (KIIs).

A purposive sampling method was used to find informants with the greatest potential for sharing rich and relevant information on outcomes to shape future opportunities, scalability, policy and practice. The use of primary and secondary data sources aims to reduce the risk of bias for comprehensively identifying the contribution of the innovation's activities towards achieving positive, negative, intended and unintended outcomes and/or impact.

Bodhi Global Analysis, an independent consultancy firm, conducted the initial document review and additional data collection through KII. Based on the draft they produced, the Elrha team restructured and edited the document to complement the main findings identified with additional, recent information provided by our grantees. Bodhi Global Analysis interviewed four key informants from Oxfam GB for this case study.

## CASE STUDY LIMITATIONS

This analysis is based on limited data, estimates and assumptions; some bias within this information can be assumed, as most data is sourced from the innovation team at Oxfam. The team carrying out this case study has not been able to triangulate and validate Oxfam's data, as that would require extensive primary data collection across all three locations. However, LSHTM, as the independent research partner in the COVID-19 scaling, has overseen Oxfam's data collection and analysis and assured quality and rigour in the findings.

More independent research and analysis of the OHS and comparable products across a range of settings and over a longer period of time could provide decision-makers with better information to help choose the most cost-effective handwashing solutions to achieve handwashing behavioural changes in different contexts.

## 1. PROJECT OVERVIEW

| | |
|---|---|
| Innovation | Oxfam Handwashing Station (OHS) |
| Lead organisation | Oxfam Great Britain (GB) |
| Partners | Research partner, COVID-19 response:<br>London School of Hygiene & Tropical Medicine (LSHTM)<br><br>Implementing partners, COVID-19 response:<br>International Centre for Diarrhoeal Disease Research, Bangladesh (Icddr,B); Institut Supérieur de Développement Rural de Bukavu (ISDR); Save the Children; NGO Forum; BRAC<br><br>Design and implementing partners, initial prototyping and testing grant:<br>Dunster House Ltd.; Carl Dolby, Humanitarian Development and Sanitation Manager, and Mateusz Madej, CAD Designer, Spark Design; Beech Grove Academy, Royal College of Art; Gambella University |
| Problem addressed/Thematic focus | WASH/internally displaced persons (IDP); refugees |
| Location | Tanzania; Uganda (initial testing)<br><br>Bangladesh; Ethiopia; the Democratic Republic of Congo (DRC) (COVID-19 response) |
| Supported from | 2016–2018 and 2020–2022 |
| Total HIF funding received | £548,281 |

## 2. INNOVATION OVERVIEW

This case study evaluates the HIF-funded Oxfam Handwashing Station (OHS),[1,2] which has received two grants from the HIF.

The case study briefly summarises the evolution of the innovation but focuses mainly on results and evidence from HIF's most recent grant for the OHS: 'Promoting Handwashing in the COVID-19 Pandemic'.

### HUMANITARIAN PROBLEM BEING ADDRESSED

Diarrhoea, and other faecal-oral diseases, account for 40% of all deaths in acute emergencies[3]. In emergencies, public health infrastructure is often compromised, and access to key services, such as drinking water and sanitation, can be limited and the environment highly contaminated. These conditions increase the risk of disease transmission and thereby threaten the health of already vulnerable populations.

Handwashing in emergencies saves lives by preventing the spread of a range of communicable diseases. In these high-risk environments, the simple act of handwashing with soap (HWWS) can be an effective means of preventing the transmission of important diseases, including diarrhoeal disease and pneumonia. Multiple systematic reviews have shown that HWWS can reduce the risk of diarrhoeal disease by approximately 50% and the risk of pneumonia among children by approximately 25%.[4]

Although studies have proven hand washing with soap has a more significant impact on reducing deaths from diarrhoeal and other water-borne diseases than any other single intervention,[5] there is no standardised kit[6] for handwashing in humanitarian contexts that combines hardware and software to effectively increase handwashing at key times. Existing handwashing facilities require technical knowledge, are usually installed later than sanitation or water facilities and often become unusable quickly due to lack of engagement and satisfaction from end users.

In 2015, HIF scoped out key barriers for achieving effective and frequent handwashing in emergency settings. One such barrier was the lack of robust, accessible and easily deployable handwashing facilities.[7] To support the identification and development of innovative solutions for overcoming barriers, in 2016, HIF launched a funding call for organisations to develop and/or "*implement (handwashing) innovation(s) in a*

[1] The Oxfam Hand Washing Station (2020). Compiled and written by Foyeke Tolani and Mary. A. Omandi.
[2] Oxfam (2019). The Future of Handwashing in Emergencies: Promotion and Practice Handwashing Kit
[3] Brown et al. (2012). Water, sanitation, and hygiene in emergencies: summary review and recommendations for further research. Waterlines.
[4] Ejemot et al. (2008). Hand washing for preventing diarrhoea. Cochrane Database of Systematic Reviews.
[5] Freeman, M. et al. (2014). Hygiene and health: systematic review of handwashing practices worldwide and update of health effects. Tropical Medicine & International Health.
[6] Although several different handwashing stations are currently under development.
[7] Since then, several alternative handwashing stations have been developed, e.g., Jengu Handwashing Unit and Gravit'eau.

*humanitarian setting to produce real examples of changed practice, testing the innovation to see how it compares to existing solutions.*"[8]

One of the five solutions selected for funding was Oxfam's OHS.

## THE SOLUTION

The OHS is a low-cost, accessible handwashing facility for household or communal use. It comprises a large water tank with soapy and clean water options, mirrors, hand-washing reminders and a 'HandyWash' water dispenser – a low-cost, water-conserving, single-touch tap made of antimicrobial brass.[9] The OHS allows for rapid and easy installation of standalone handwashing stations near latrines in displacement camps. The OHS can be installed as part of a first-phase response to support public health and sanitation promotion activities – in and out of emergency contexts.

### Users

The OHS is built to be accessible and inclusive for a range of user groups:

- people living in refugee camps
- IDPs
- people with disabilities (PWD)
- residents and host communities
- people using health centres
- patients in isolation and quarantine centres
- children in schools and child-friendly spaces.

### Design

The OHS invention was designed to be easier and more practical to use in comparison to traditional hand-washing units, such as the 'Tippy Tap',[10] and its design features[11] address the most common issues with these handwashing stands. Additionally, it was built for easier installation and at a lower unit cost than more advanced hand-washing stations already available in the humanitarian supply chain.[12]

The OHS comprises a four-litre plastic tank for soapy water and a 24-litre clean water reservoir. Its taps are self-closing with a water-conserving, low-flow rate, enabling over two hundred handwashes per tank load. It has large mirrors to encourage handwashing for longer; it also has places for two people to use the station at the same time.

[8] HIF (2015). Call for proposals.
[9] Oxfam Supply Centre presentation video.
[10] Centers for Disease Control and Prevention. Tippy Taps.
[11] Oxfam Handwashing Stand.
[12] Oxfam Supply Centre presentation video.

### Delivery model

The OHS innovation draws on – and adds to – recent research by LSHTM, which demonstrated that hygiene promotion programmes are more likely to achieve behavioural change when using a combined approach of improved hygiene infrastructure with hygiene promotion activities.[13]

As such, it deploys a two-pronged, integrated approach to increasing handwashing rates among communities within humanitarian settings: (1) hardware, meaning the handwashing station, soap and water; (2) software – meaning the knowledge and the behavioural/emotional nudges through Mum's Magic Hands (MMH)[14] promotional activities to over 3,000 caregivers across all project sites.[15] MMH is a set of activities that can be integrated into public health and hygiene promotion programmes, encouraging behavioural change via emotional nudges in key WASH outcome areas, such as handwashing with soap.

### Cost

The OHS kits are available for purchase as a six-unit package costing £352 (just under £59 per unit) from Oxfam's supply centre in the UK.[16] Tools and instructions to assemble the units are provided as part of the kit.

## HIF SUPPORT FOR THE SOLUTION

The HIF has awarded two grants for the Oxfam Handwashing Station project. The first, starting in 2016, was for developing and piloting the OHS, trialling it with promising results [17, 18] in Tanzania and Uganda in 2018. The second, beginning in 2020, was a scale-up grant in response to the COVID-19 pandemic. According to the World Health Organisation (WHO), frequent and thorough hand-hygiene practice is one of the most important means for preventing infection of the COVID-19 virus.[19] In 2020, WHO and United Nations Children's Fund (UNICEF) guidelines on COVID-19 response proposed that WASH practitioners should work towards improving access to hand-hygiene facilities and use multidimensional promotional approaches to encourage good hand-hygiene behaviour.

To support these efforts, the HIF supported Oxfam to rapidly scale up the OHS – including the software behaviour change component – across three different countries.

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[13] White S., Thorseth A. H., Dreibelbis R., Curtis V. (2020). The determinants of handwashing behaviour in domestic settings: An integrative systematic review. International Journal of Hygiene and Environmental Health.
[14] Mum's Magic Hands website home page and Mum's Magic Hands research and evidence webpage.
[15] White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.
[16] Oxfam Handwashing Stand Kit webpage.
[17] Tolani, F., Ojeny, B., D'Amico, M., Raphael, L., Barker, L., and Morris, J. (2020). Improving Handwashing Promotion and Practice in Emergency Contexts: Evaluating Two Novel Approaches in Nduta Camp, Tanzania. Acta Scientific Women's Health.
[18] Elrha (2018). Handwashing Kit Faces Its Toughest and Final Test.
[19] WHO: Water, Sanitation, Hygiene (WASH) and waste management for the prevention of Covid-19. Updated Technical Note – 2nd edition, 5 April 2020.

Oxfam deployed 2,010 handwashing stations across **Ethiopia, Bangladesh and the Democratic Republic of Congo** – targeting people living in refugee and IDP camps, as well as targeting host communities, schools and health facilities.

The stations were installed mainly in shared public spaces – for example, at latrines and markets, and in shared compounds, schools and health facilities. WASH committees were also established by Oxfam, in addition to user groups and networks of community health volunteers to support the continual maintenance of the OHS.[20]

The overarching goal of this grant was to decrease incidences of COVID-19 and diarrhoea-related diseases through **increasing and sustaining handwashing with soap,** particularly among refugee camp populations. Additionally, the project aimed to contribute more robust evidence on the impact of the OHS and its associated behavioural change intervention.

## EVALUATION DESIGN

Alongside the implementation of 2,010 handwashing stations, the HIF also funded LSHTM to evaluate the effectiveness of the OHS.[21] LSHTM and the implementing partners used a mixed-method approach of analysing secondary data on handwashing, observing handwashing behaviour, focus group discussions (FGDs) and in-depth interviews (IDIs) to:

1) Determine whether the use of the OHS and promotional activities achieved any changes in the frequency of handwashing before and after installation of the OHS and the use of promotional activities.
2) Test the accessibility, ease of use, maintenance and satisfaction with the OHS from users and technical staff

Oxfam with its implementation and research partners, carried out baseline and post-implementation (between three and four months after set-up in the three countries) assessments as part of the project's scale-up in order to evaluate the impact of the innovation in the context of COVID-19. They monitored a range of indicators, including handwashing rates, OHS satisfaction rates and the proportion of handwashing stations with water and soap at spot checks. They collected data using structured observations, focus group discussions, phone surveys for self-reported frequency of handwashing with soap and participatory approaches such as consultative interviews.

[20] White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.
[21] White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.

## 3. OUTCOMES AND IMPACT

Results from Oxfam's and LSHTM's evaluation indicate that **scaling up the intervention could substantially increase handwashing rates** and effects would likely be long-lasting for more vulnerable people in different contexts.[22] The summary table below highlights the key results.

### Summary table

| Outcome/output | Result (average across countries) | Comments |
|---|---|---|
| Reach | **Total reach: Approx. 425,000 people*** <br><br> COVID scaling (HIF-funded): 173,278 people <br><br> Additional scaling: At least another approx. 255,000 people* | 2,010 OHS funded by the HIF. <br><br> Approx. 4,000 additional OHS scaled with other funding.[23] |
| Handwashing rates | **Average 40 percentage point increase in handwashing rates from baseline.** | Significant variance across contexts. See outcome two for further details. |
| User satisfaction | 96% satisfaction | No baseline data. |
| Accessibility | Access to functional handwashing devices increased by 56 percentage points. <br><br> Improved accessibility for children and people with disabilities. | 42% of existing handwashing devices were classed by Oxfam as 'functional' (presence of soap and water) at baseline. <br><br> At endline, an average of 98% of OHS were classed as functional. |

*Projected medium estimate based on reach per station for the first 2,010 stations (see below for details). Below, we examine these findings in further detail.

### OUTCOMES FOR PEOPLE AFFECTED BY CRISIS

#### 1) Reach

Oxfam's logbooks showed that 173,278 people had accessed the 2,010 handwashing stations at the endline.

Since the end of the reporting period in October 2021, an additional approx. 4,000 handwashing stations have been distributed to a further nine countries (i.e., a total of

[22] Key informant interview. Grantee. 29 July 2022.
[23] Oxfam used other income streams (not grants) to support further scaling of the OHS.

6,000 stations are operational). Oxfam have not been monitoring the use of the last 4,000 stations, so the total reach of the OHS can only be calculated as projected estimates. Below is a range to indicate expected reach:

- High estimate: If we assume that the 'last' 4,000 stations reach 100% of the number of people, per station, that the 'first' approx. 2,000 did, they would reach approx. 340,000 people. This would mean that the **total number of people who have accessed the OHS is approx. 510,000**.
- Medium estimate: If we assume that the 'last' 4,000 stations reach 75% of the number of people, per station, that the 'first' approx. 2,000 did, they would reach approx. 255,000 people. This would mean that the **total number of people who have accessed the OHS is approx. 425,000**.
- Low estimate: If we assume that the 'last' 4,000 stations reach 50% of the number of people, per station, that the 'first' approx. 2,000 did, they would reach approx. 170,000 people. This would mean that the **total number of people who have accessed the OHS is approx. 340,000**.

### 2) Increased handwashing rates

The increased access to handwashing facilities provided by the implementation of the OHS at scale also appears to have promoted an increase in observed handwashing behaviours: at the endline observation, **handwashing frequency had increased by an average of 40 percentage points across the three project country sites**.[24]

The data shows that the increase happened in all locations, irrespective of whether other handwashing facilities were available at baseline or not.

Detailed breakdown of handwashing rates across three locations:

| Country | Baseline | Post OHS installation | Difference (percentage points) |
|---|---|---|---|
| Bangladesh | 8% | 55% | 47 pp |
| DRC | 20% | 78% | 58 pp |
| Ethiopia | 9% | 23% | 14 pp |
| **AVERAGE** | **12%** | **52%** | **40 pp** |

Table showing proportion of population near a handwashing station practicing good hand hygiene. Average increase: 40 percentage points.

At baseline, 8%, 20% and 9% of people entering the observation area around a (any) handwashing device at baseline in Bangladesh, DRC and Ethiopia, respectively, were

[24] Oxfam UK (2022). Final Report.

observed washing their hands with soap and water.[25] Post-installation, this increased to 55% for Bangladesh, 78% for DRC and 23% for Ethiopia at the endline, which indicates that the joint intervention of OHS and MMH behavioural prompts had an impact on increasing observed handwashing rates.[26, 27]

### 3) High degree of satisfaction with OHS by end users

Data from the OHS analysis framework shows that 96% of users reported they were satisfied with the OHS; taken together with information from key informants, the data reflects a high level of local ownership of the OHS,[28] and an Oxfam team member reflected that "*user feedback satisfaction was a really key outcome*."[29]

### 4) Accessibility

Oxfam found significant increases (to an average of 98%) in the availability of functional handwashing devices at the endline, which can be considered a proxy for access.

Endline data shows that the percentage of children able to access handwashing facilities rose from 5% to 14% in Bangladesh, 10% to 36% in DRC and 20% to 40% in Ethiopia from baseline to the time of conducting the endline evaluation.[30] However, some endline participants in the Oxfam/LSHTM-run FGDs noted that the OHS was too high for very small children to reach.[31]

More detail on accessibility is outlined in the VfM section below.

## CONTRIBUTION TO, OR INFLUENCE ON, CHANGES IN POLICY OR PRACTICE

**Policy changes.** At the time of writing this case study, there has been no reported evidence of the innovation's contribution to influencing policy changes.

**Dissemination of results and uptake of solution (practice changes).** The OHS-MMH innovation project team pursued a number of research outputs for dissemination, including a presentation of the OHS and MMH at Loughborough University's WEDC International Conference in 2021, contribution to a news article on Devex entitled, 'Oxfam rolls out its answer to the tippy tap', and an in-person and online OHS launch event at Oxfam's supply centre in Bicester, UK, which targeted humanitarian donors and WASH, logistics and supply practitioners. There is some

[25] Oxfam UK (2022). Final Report.
[26] Oxfam UK (2022). Final Report.
[27] Please note: This figure has been calculated by Bodhi based on the OHS Analysis Framework provided by Oxfam UK on 23 August 2022. The figure Bodhi calculated is five percentage points lower than what was calculated and reported by Oxfam.
[28] Key informant Interview. Grantee. 29 July 2022
[29] Key informant Interview. Grantee. 29 July 2022
[30] Oxfam UK (2022). Final Report.
[31] White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.

evidence to suggest that dissemination efforts have helped raise interest in the OHS with other humanitarian agencies, for example:

- A presentation of the OHS project at a WASH Sector meeting in Bangladesh (precise date unknown) inspired the participation of three partners in the COVID-19 scale-up: BRAC, Save the Children and NGO Forum.[32] A key informant noted that other NGOs in the same project locations also expressed interest in the OHS –including the organisations that eventually became delivery partners in the HIF-funded project.
- The OHS has been included in the UNICEF Handwashing Technologies Catalogue.[33]
- In 2022, 20 OHS were purchased by the International Livestock Research Institute for a CGIAR[34] research programme on improving food safety in informal and traditional markets in low- and middle-income countries.

So far, however, the OHS has not been adopted at scale outside of Oxfam programming activities. The following challenges in relation to adoption and scale are highlighted by Oxfam in a final report submitted to Elrha at the end of 2021 by Oxfam and its innovation partners: "*Demand will be unpredictable, will spike after an emergency, but will rapidly decrease following the emergency*"[35] and "*NGOs are not reliable customers since their procurement processes require comparison of multiple suppliers and selection of the cheapest option*",[36] suggesting that considerations around accessibility and effectiveness are not always weighted highly enough in the procurement of hardware like the OHS.

### CONTRIBUTION TO LEARNING

**Academic learning.** A pre-peer-reviewed article detailing the innovation project and results of the qualitative study is available online at Research Square, entitled: *Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package.*[37] The article has been submitted to an academic journal and is currently undergoing revisions after peer review.

**Practical learning.** As mentioned in an Elrha project blog and throughout this case study,[38] Oxfam drew a wide range of learnings from the COVID-19 scaling. For example, the team learned that in Ethiopia, the majority of households preferred to

[32] Oxfam UK (20222). Final Report.
[33] UNICEF Fact Sheet (2020). Handwashing Stations and Supplies for the COVID-19 Response. Accessed here on 31 October 2022.
[34] CGIAR website.
[35] Oxfam UK (2022). Final Report.
[36] Oxfam UK (2022). Final Report.
[37] White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.
[38] Elrha (2022). Oxfam Handwashing Station - Testing at Scale.

bring the OHS into their homes at night to protect them from vandalism. This insight prompted the Ethiopia Oxfam WASH team to build protective shelters for OHS situated outside the house – for example, next to family latrines. In DRC, users preferred protecting their OHS with a lock and key rather than using the numerically coded padlocks supplied with the kits due to low literacy levels.

## 4. VALUE FOR MONEY (VfM)

The Foreign, Commonwealth & Development Office's (FCDO) '4Es' framework for VfM sets out the four key dimensions in assessing VfM, and we use this to structure our analysis:

- **Economy:** Are we (our agents) buying inputs of the right quality at the right price?
- **Efficiency:** How well are we (our agents) converting inputs into outputs? ('Spending well')
- **Effectiveness:** How well are the outputs produced by an intervention having the intended effect? ('Spending wisely')
- **Equity:** How fairly are the benefits distributed? To what extent will we reach marginalised groups? ('Spending fairly')

### ECONOMY

The Oxfam Handwashing Station was designed to be cheaper than its alternatives. The table below is based on Oxfam's own assessment of comparable handwashing units and their costs.

| Product | Unit cost |
|---|---|
| Oxfam Handwashing Station | £58.66 |
| Jengu* | £200 |
| Twin foot pedal design* | £100 |
| Alternative in Ethiopia* | £150 |
| Alternative in Bangladesh* | £220 |

*Costs provided by Oxfam directly and in the Oxfam Technical Brief: Handwashing Stations.

This would suggest that the OHS costs significantly less than these alternatives. More research is needed to explore local alternatives and compare the costs of these versus purchasing and transport costs of the OHS.

### EFFICIENCY

Most components of the delivery at scale (research design, recruitment of enumerators, public health engineers (PHE), health-promotion staff, product designers and manufacturers) were already planned out in detail using the 2016 HIF funding before the COVID-19 scaling project, allowing for rapid and effective scaling. Similarly,

previous rigorous user testing had ensured a user-friendly design that resulted in a high satisfaction rate and only needed limited local adaptation.

Oxfam noted occasional problems with the kits – for example, one instance of OHS legs going missing in Bangladesh. To address this, Oxfam were able to get replacements produced locally.

Some practitioners also noted that the delivery groups for MMH were too small due to the need to avoid large group gatherings during the COVID-19 pandemic. This, in turn, limited the number of people reached and subsequent behavioural change at the camp level: *"We selected 60 groups of 10 mothers per group, which is 600 hundred in total, but the total population [of the camp section] is around 21,000. So, you wonder, does this programme represent the whole camp, is it enough to create change?"*[39]

### EFFECTIVENESS

The table below summarises the key effectiveness outputs produced by the OHS compared to existing handwashing facilities:

| Product | Handwashing rates | User satisfaction | Accessibility |
|---|---|---|---|
| Oxfam Handwashing Station* | 52%** | 96%** | Average of 98% of OHS were classed as 'functional' (presence of soap and water) at endline. |
| Existing handwashing infrastructure in project contexts (baseline) | 12% | Not known. | 42% of handwashing devices classed as 'functional' (presence of soap and water) at baseline. |

*Data specific to Ethiopia, DRC and Bangladesh COVID-scaling project.

FGD participants in the project's evaluation stated that the mirror, the colours of the OHS and its "*unique modern look*" made it attractive to use by project participants, and that the product design is appealing and relevant to children[40] and Oxfam staff reflected that *"[in Ethiopia] Ownership has been a real positive.*

[39] Public Health Engineer, Bangladesh. White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.
[40] White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.

*Ownership is the main thing we need as WASH practitioners (… and we have) seen that very definitively with this project."*[41]

Furthermore, Oxfam informants were confident the combination of the OHS and MMH was a powerful one: *"It was evident that the promotional activity (Mum's Magic Hands) really pushed the outcomes to be realised"*.[42]

One key informant noted, however, the different user reactions across contexts and how the OHS was not always universally accepted: *"In DRC, some people thought [the OHS] was military equipment."*[43] However, "*To change design is very expensive because of plastic mould design – means that we're not easily able to respond to the different user feedback."*[44]

Oxfam reported extensive discussions within the innovation team about this: while it is difficult to make changes to the design, the changes requested were not necessarily related to that but more frequently to its individual elements, mainly the tap. The team are looking at how to strike the right balance between changing the design and helping users to understand the reasoning behind some of the design options – and it was clear that, in any case, the implementing teams need to do more of the latter.

### EQUITY

The innovation targeted some of the most vulnerable people in humanitarian settings, including children and people with disabilities. Oxfam/LSHTM observed at the baseline that only 7% of existing handwashing facilities were accessible for persons with physical disabilities, and 28% were accessible for children. The installation of the OHS made significant changes to these contexts, with 57% observed to be accessible for persons with physical disabilities and 60% accessible to children. Access by children and persons with physical disabilities is done by adjusting the heights of the OHS and the locations where they are installed.[45]

However, some people with disabilities reported in Oxfam/LSHTM's FGDs that the OHS is easier to use than other hand-washing facilities but that the OHS was located too far from their homes and so they rarely used them.[46] In the interviews for this case study, innovation team members reflected that implementers may need to consider

[41] Oxfam UK (2022). OHS Learning Review (internal document).
[42] Key informant interview. Grantee. 29 July 2022.
[43] Key informant interview. Grantee. 29 July 2022.
[44] Key informant interview. Grantee. 29 July 2022.
[45] Final report narrative.pdf Oxfam UK (2022). Final Report.
[46] White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.

installing more OHS and mapping out where people with mobility difficulties are located in order to reach the most vulnerable more effectively.[47]

This aligns with a general concern from informants: project participants and OHS monitoring staff in Cox's Bazar and Ethiopia reported that more OHS units were required to cover the large camp area (with Kutupalong in Cox's Bazaar, for example, having a population of over one million people). This was difficult to fulfil by the project team due to limited capacity and funding to install and monitor additional OHS: *"More stands [OHS] are needed, for half of the community did not get handwashing facilities in the camp, there is a big shortage still".*[48]

In addition, public health promotion (PHP) staff feedback suggests that OHS and MMH design, planning, and implementation needs work to ensure greater gender inclusion: "*The rate of participation of men compared to women was still too minimal. We focused and talked about the magic hands of mothers, and so often the men tended to stay away, and it was only as the days went by that they started to integrate gradually*".[49] After the HIF-funded project, Oxfam has updated all its OHS materials to represent both genders to address this learning.

## CONCLUSION

**The evidence available suggests that the OHS, combined with MMH, may offer a cost-effective way of improving handwashing rates in a range of humanitarian settings**.

However, more evidence and guidance must be made available to procurement decision-makers to help them understand the costs of the OHS versus local alternatives that may not need to be shipped. The environmental impact should also be considered in this. Additionally, more work needs to be done to ensure the equity elements of the intervention are fully delivered, especially accessibility for people with disabilities and contextual adaptation to ensure cultural appropriateness.

[47] White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.
[48] Public Health Engineer, Ethiopia. White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.
[49] Public Health Promotion staff, DRC. White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.

# 5. THE FUTURE: EMERGING LESSONS AND OPPORTUNITIES

## LOCAL ADAPTATION

Although piloting was conducted in Tanzania and Uganda before taking the OHS to scale during the pandemic, these countries and the pilot locations were very specific in their contexts. During deployment in other countries as part of this innovation, OHS project teams learned that initiation testing in these specific countries would have been beneficial for aiding appropriate adaptation of how the innovation could be most effectively delivered prior to the scale-up. Project teams adapted their approaches accordingly, by, for example*, "including extra awareness raising of the environmental reasoning behind limited water release from taps*".[50]

## CHALLENGES OF SCALING UP THE OHS: METHODOLOGICAL CHALLENGES FOR EVALUATION

Determining the impact of the innovation project was made more complex due to the presence of other handwashing stations and hygiene promotion activities in the project locations as a result of COVID-19. The pandemic itself and pre-existing awareness of the benefits of handwashing in project communities may have contributed to the increase of handwashing with soap observed during the reporting period (October 2020 to October 2021). It is a reasonable assumption that similar factors may be present in many other contexts as well where the urgent deployment of OHS might be needed – for example, in cholera or Ebola outbreaks.

Project implementation staff found it difficult to use SurveyCTO[51] in the camp project locations due to poor internet connection, so hard copies of surveys were used instead, which a key informant noted as being "*tedious*".[52] Finally, a key informant who took part in a Learning Review at the end of 2021 stated that a deeper analysis of observational data and further spot-checking of it could not be done due to the short timeframe (14 months) for the funding.[53]

## OPPORTUNITIES

There are many opportunities for further exploration as a result of the OHS scale-up, namely:

- Additional testing in different country/community-level contexts, including outside of the COVID-19 pandemic.

[50] Key informant interview. Grantee. 29 July 2022.
[51] A digital survey tool used for capturing data online and offline. See the SurveyCTO website.
[52] Oxfam UK (2022). OHS Learning Review.
[53] Oxfam UK (2022). OHS Learning Review.

- Comparing handwashing rates and costs with other similar handwashing kits/stations.
- Testing for potential differential impact on handwashing rates of:
    - OHS only vs OHS and MMH vs a control group
    - Different emergency contexts
    - Different user groups and cultural contexts

- Adapting design according to different context-specific needs and testing in those contexts, e.g., higher flowrate taps for where water is in abundance and expected to be received in quantity, e.g., in Bangladesh.

- Allocating a dedicated person for OHS and MMH implementation and ongoing monitoring.[54]

- Follow up with the community of users to understand how well the OHS and MMH approach is doing over time.[55]

- Situate the OHS closer to the homes of people with disabilities so that they are easier to access.[56]

[54] Oxfam UK (2022). OHS Learning Review.
[55] Oxfam UK (2022). OHS Learning Review.
[56] White, S. et al. (2022). Facilitating hand hygiene in displacement camps during the COVID-19 pandemic: A qualitative assessment of a novel handwashing stand and hygiene promotion package. Pre-print report, not peer reviewed. Research Square. Accessed here on 31 October 2022.