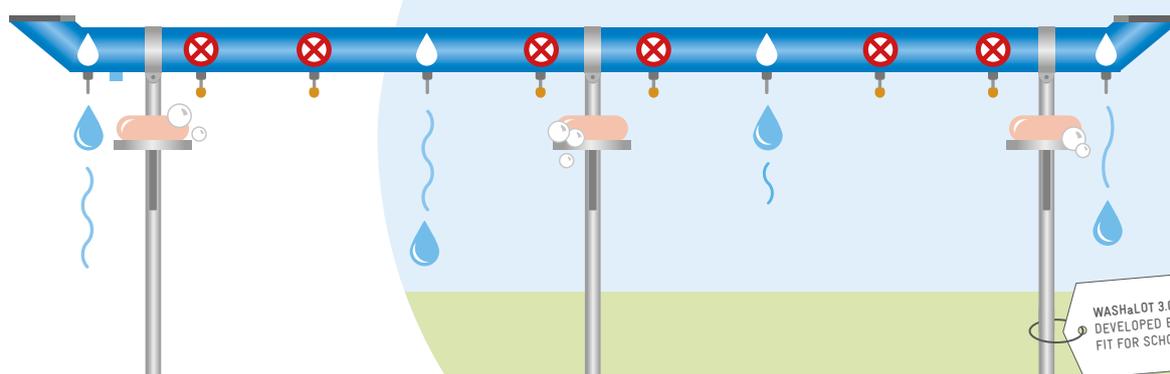




TECHNOLOGY APPLICABILITY FRAMEWORK // TAF ASSESSMENT WASHaLOT 3.0

130 WASHaLOTs
placed in public schools,
health care facilities,
district offices and other
public institutions in
Kampala and West Nile
(Uganda)



SCALE-UP-TOOL // THE TECHNOLOGY APPLICABILITY FRAMEWORK (TAF)

PURPOSE

This tool will help you to decide if a technology implemented as a pilot fulfils the criteria for further implementation and scaling-up. In order to evaluate the potential of a given technology, the parameters of the specific local setting have to be analysed before upscaling. The results of the TAF can also be applied to a setting with similar parameters and therefore facilitate the upscaling process.

WHEN TO USE IT

In a specific local setting, the TAF systematically assesses the applicability of a technology in its pilot phase. It can also be used on a broader scale (city/nationwide level) during upscaling. Developed for the Water, Sanitation and Hygiene (WASH) sector, the TAF is applicable in other sectors as well. In this context, several settings have been used owing to planned scale up in public places and institutions.

SETTING

Used in small groups with the actors involved in the process.

FACILITIES AND MATERIALS

Templates and workshop materials.

DURATION & COSTS

Several days to several weeks incl. preparation, training, fieldwork, and reporting.

Cost-efficient tool (costs: personnel, workshop and interviews, material and logistics).

TRAFFIC LIGHT SYSTEM USED TO SCORE TAF INDICATORS

- + High value, neutral or positive, supportive characteristics
- 0 Potential impact, could become critical, needs follow-up
- Low value, negative, critical, hindering characteristics
- ? Unclear information, should be clarified

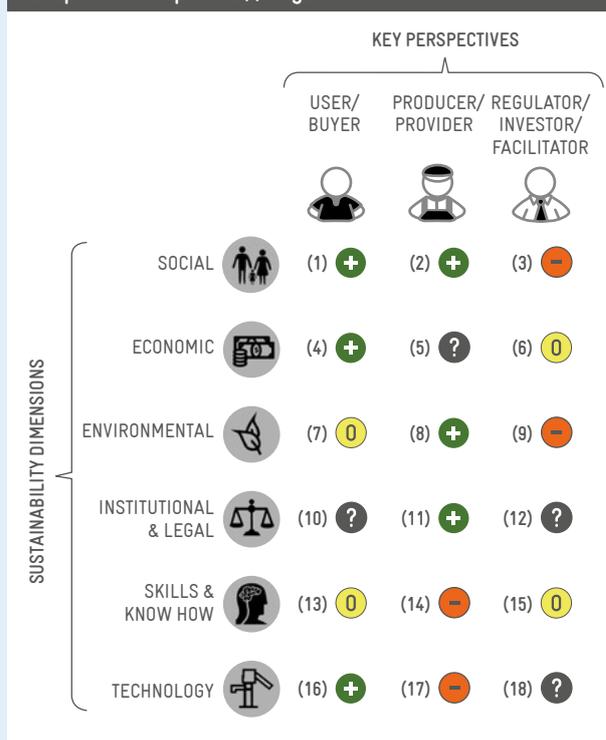
WHY IS THE TAF USED

If you work with a technology in a specific local setting and you would like to expand its use to other locations, the TAF is an efficient tool to employ. The TAF comprehensively assesses an individual technology and identifies the risks and opportunities of use. It facilitates the understanding of how a new technology performs regarding the different sustainability dimensions and which challenges might be faced in scaling-up the technology. It is a comprehensive learning approach, which helps you and your partners to deal with the technology systematically. The TAF can be used as a planning tool as well as for monitoring purposes, after a first pilot phase or during implementation at scale.

THE TAF PROCESS IN A NUTSHELL

In a participatory process, a technology implemented as a pilot is assessed through the perspective of three key stakeholder groups engaged with the implementation of the technology: user/buyer, producer/provider and regulator/investor/facilitator. The three key stakeholder groups assess the six sustainability dimensions individually, resulting in 18 indicators (Fig.1). The TAF procedure comprises four steps, namely screening, assessment, presentation of results and interpretation.

Graphical TAF profile // Figure 1



Olschewski, Casey 2015: 6

THE FOUR STEPS

1. SCREENING

Analysis of applicability of a specific (new) technology in a defined setting.

2. ASSESSMENT

FIELD WORK: Assessment of technology with focus on the 18 TAF indicators through one-on-one interviews, focus group discussion(s) and/or observation by use of specific questionnaires. Generated field data is used as basis for scoring the 18 indicators according to the TAF standard traffic light system.

Scoring Workshop: Information/perspectives/opinions captured during field work are cross-checked with stakeholders for accuracy and the final scores are agreed upon.

3. PRESENTATION OF RESULTS

The scoring of each of the 18 indicators through specific scoring questions results in the graphical TAF profile (traffic light system, Fig. 1).

4. INTERPRETATION

The graphical TAF profile offers the basis for comprehensive interpretation and allows the identification of strengths, risks, bottlenecks and uncertainties with regarding to a technology implemented as a pilot. It provides guidance for developing a roadmap for upscaling.

PROGRESSION // FROM WASH TO ALL SECTORS

The TAF was developed within the EU-funded WASH Technologies project WASHTec with SKAT as the leading organisation. From 2011 to 2013, the TAF was developed as an open source tool and tested in three countries on 13 different WASH technologies. To date, the TAF has been applied in several countries worldwide. To broaden the use of the TAF in development cooperation, GIZ uses the tool's scaling-up potential and adapted the tool accordingly. Among others, GIZ has carried out TAFs in Uganda, Afghanistan, the Philippines, Nepal and Zambia (Fig. 2). The methodology can also serve as a decision support tool for technologies in other sectors apart from WASH, for example irrigation systems, technologies in waste management, renewable energy and transportation.

STRENGTHS AND LIMITATIONS

The TAF methodology comprises a transparent, systematic and participatory approach to include all relevant stakeholders as well as a comprehensive sustainability assessment across six dimensions. Even though a TAF assessment is primarily valid for a technology implemented as a pilot in a given local setting, the TAF results can be used to determine the scaling-up potential of this technology in a similar context. It gives an assessment of the technology, but also motivates and inspires dialogue between stakeholders and has the potential to inform and advise sector/policy development and larger projects/initiatives on scaling-up the technology and its upscaling in a broader context.

SOURCES:

- > Olschewski, André; Casey, Vincent (2015): The Technology Applicability Framework. A Participatory Tool to Validate Water, Sanitation, and Hygiene Technologies for Low-Income Urban Areas. In: Hostettler S., Hazboun E., Bolay JC. (eds) Technologies for Development. Springer, Cham.
- > Skat (2013): Olschewski, André: TAF (Step 0): Manual. WASHTec Project. St Gallen, Switzerland.
- > Schweitzer, Ryan; Grayson, Claire; Lockwood, Harold (2014): Mapping of Water, Sanitation and Hygiene Sustainability Tools Technical Report.

TAF implementation for technical innovations // Figure 2

GIZ has already tested and implemented the TAF in different countries to assess the scaling-up potential of various technical innovations, for example:

AFGHANISTAN // DEWATS: www.susana.org/en/knowledge-hub/resources-and-publications/library/details/3396

PHILIPPINES // WASHaLOT: www.susana.org/en/knowledge-hub/resources-and-publications/library/details/3397

UGANDA // Faecal Sludge Transfer Stations: www.susana.org/en/knowledge-hub/resources-and-publications/library/details/2893

NEPAL // Sanitary Pad Machines: www.susana.org/en/knowledge-hub/resources-and-publications/library/details/3701

 FOR FURTHER INFORMATION, PLEASE CONTACT: sanitation@giz.de

LIST OF ABBREVIATIONS

ATIR	Arua Technical Institute Ragem
ATC	Appropriate Technology Centre
BMZ	German Federal Ministry of Economic Cooperation and Development
DHO	District Health Office
DWO	District Water Office
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HCF	Health Care Facilities
HPMA	Handpump Mechanics Association
KCCA	Kampala Capital City Authority
MoES	Ministry of Education and Sports
MWE	Ministry of Water and Environment
NGO	Non-Governmental Organisation
NUWS	Northern Umbrella of Water and Sanitation
TAF	Technology Applicability Framework
UGX	Ugandan Shillings
VAT	Value Added Tax
WASH	Water, Sanitation and Hygiene
WatSSUP	Water Supply and Sanitation for Refugee Settlements and Host Communities in Northern Uganda
WSDF	Water and Sanitation Development Facility

LIST OF FIGURES

Figure 1	Graphical TAF profile
Figure 2	TAF implementation for technical innovations
Figure 3	WASHaLOT design in Uganda
Figure 4	WASHaLOT station in Northern Uganda
Figure 5	WASHaLOT 3.0 long model with pandemic adjustments
Figure 6	18 indicators for WASHaLOT assessment
Figure 7	WASHaLOT station with nudges (footprints), Northern Uganda
Figure 8	Map of Uganda indicating the districts and Kampala city where WASHaLOTs have been installed
Figure 9	WASHaLOT station short model in a refugee settlement, Northern Uganda
Figure 10	Traffic light system used to score TAF indicators
Figure 11	WASHaLOT station in a school in Kampala
Figure 12	Results from school settings, Kampala
Figure 13	Results from health care facilities, public buildings and schools, Arua, Yumbe, Lira
Figure 14	Results from Schools, Apac
Figure 15	A student refilling a WASHaLOT in a school in Kampala city
Figure 16	A person washing hands in a health care facility in the Northern Region
Figure 17	Children washing hands in a school in the Northern Region
Figure 18	Mobile WASHaLOTs in the Northern Region
Figure 19	A hand pump mechanic working on fabrication and installation of WASHaLOTs

LIST OF TABLES

Table 1	WASHaLOT installation timeline
Table 2	List of stakeholders interviewed in Uganda
Table 3	Results of TAF per setting based on key features
Table 4	WASHaLOT certification in Uganda through ATC
Table 5	Potential negative environmental impacts of WASHaLOT

CONTENT

.....	
List of Abbreviations	4
.....	
List of Figures and Images	4
.....	
List of Tables	4
.....	
1. EXECUTIVE SUMMARY	5
.....	
2. INTRODUCTION	6
> Background // The Importance of Hand Hygiene for Infection Prevention and Control	6
> Context // Refugee Crisis in Uganda	7
> TAF // Technology assessed	8
> Key Features // WASHaLOT 3.0 as installed in Uganda	9
.....	
3. TAF ASSESSMENT OF WASHaLOT IN UGANDA	10
> TAF // Objectives	10
> TAF // Methodology	11
> TAF // Settings	12
.....	
4. SCORING	14
> Presentation and Discussion	14
> Results	15
> Setting 1 // Schools in Kampala	16
• Recommendations	21
> Setting 2 // Pandemic Response in HCFs	
Public Buildings and Schools in Northern Uganda	22
• Recommendations	27
> Setting 3 // Schools in Northern Uganda	28
• Recommendations	29
.....	
5. LIMITATIONS	30
> Covid-19	30
> WASHaLOT Usage	30
> Local Production	30
> Location	30
> Communication between various Regulators and Investors	30
.....	
6. CONCLUSIONS	31
.....	
7. BIBLIOGRAPHY	32
.....	
8. ANNEX	33
.....	
Imprint	44

1. EXECUTIVE SUMMARY

This TAF report assesses the scalability of WASHaLOT 3.0 handwashing stations installed in Kampala and Northern Region of Uganda commissioned by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of the Federal Ministry of Economic Cooperation and Development (BMZ), implemented by the Water Supply and Sanitation for Refugee Settlements and Host Communities in Northern Uganda (WatSSUP) Programme which started in 2018. WASHaLOT 3.0 has been recently installed in public institutions in Northern Uganda as a part of pandemic response (COVID-19) to provide facilities for handwashing with soap.

The WASHaLOT was developed by the GIZ Regional Fit for School Programme together with the GIZ Sustainable Sanitation Sector Programme in cooperation with the University of Applied Sciences Potsdam as a durable, low-cost and water-saving handwashing facility technology and has been promoted in schools in the Philippines, Indonesia, Laos, Cambodia, Nepal as well as South Sudan and Guinea. Handwashing facilities like the WASHaLOT are designed to enable both group handwashing and individual handwashing at any critical time.

The report also takes into consideration, WASHaLOT 3.0 facilities in schools in Kampala and Northern Uganda installed by the Sanitation for Millions Programme which is a global initiative under GIZ operating since May 2017. To establish the scaling-up potential of WASHaLOT 3.0 in Northern Uganda, WatSSUP decided to conduct a Technology Applicability Framework (TAF) assessment based on already existing facilities installed in schools (Kampala and Apac), Health Care Facilities (HCFs) and public buildings (West Nile) to inform its scalability and applicability in refugee settlements and host communities in Northern Uganda.

THE ASSESSMENT IS DIVIDED INTO THREE SETTINGS:

This report is useful for government officials, donors, non-governmental organisations, community-based organisations and practitioners looking to install group handwashing facilities in schools, public institutions and emergency settings.

The WASHaLOT 3.0 is seen as a unique group handwashing station which is cost efficient and time saving. Various stakeholder groups among users (schools, HCFs and public buildings) use the technology in different ways (timely and scheduled in schools; one-time and irregular in other settings). However, they all value handwashing as important and appreciate the presence of a handwashing facility in the premise. Given that the technology has been in use only for a few months in the North, the users there are still getting acquainted with the design that is new in the region.

The WASHaLOT 3.0 has received positive responses along all sustainability indicators in the assessment. However, careful attention should be paid along the social, legal and institutional and economical dimensions of sustainability. The current WASHaLOT 3.0 design should be adapted for adults as users in terms of spacing of nozzles and number of users per WASHaLOT. Capacities and institutional arrangements should be defined by the implementers prior to scale up. Costs of production and installation could be reduced with increasing demand, government validation of the technology in the North, decentralised production in Uganda and tax exemptions: e.g. Value Added Tax (VAT).

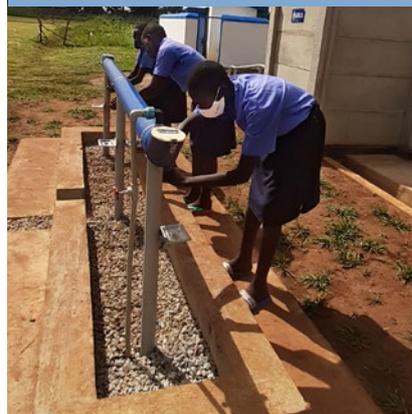
SETTING 1 // in schools in the capital city Kampala as a regular WASH measure to improve access to handwashing facilities among children.



SETTING 2 // as a pandemic response measure in HCFs, public buildings and schools in Northern Uganda (Arua, Yumbe, Lira).



SETTING 3 // installed in schools in Apac (Northern Uganda) as a regular WASH measure to improve access to handwashing facilities among children.



2. INTRODUCTION

BACKGROUND // THE IMPORTANCE OF HAND HYGIENE FOR INFECTION PREVENTION AND CONTROL

Handwashing with soap proves to be one of the most effective interventions to prevent infectious diseases (Burton et al., 2011) [1]. It is a public health concern and children and adults alike should develop a habit of handwashing, especially after using the toilet or before preparing or eating food. According to UNICEF in 2020, in many parts of the world, children, parents, teachers, health care workers and other members of the community do not have access to basic handwashing facilities at home, in health care facilities, schools or elsewhere.

Handwashing can be a simple preventive measure in health care settings where health care associated infections are a global burden and a huge concern. Contaminated hands could lead to transmission of pathogens from one source to another. Lack of hand hygiene in health care settings has led to increased transmission of diseases due to limited personnel and facilities which are common problems leading to overcrowding (WHO, 2009)[3].

With the onset of the COVID-19 pandemic, an infectious viral disease, the importance of handwashing has heightened. With people advised to observe physical distancing and good hygiene habits amidst the pandemic, health experts have constantly reminded that the simple practice of handwashing with soap and water is one of the most effective ways to prevent the spread of germs and viruses (WHO, 2020)[4]. The crisis has triggered renewed interest and a rapid scale-up of handwashing facilities, and at the same time a wide range of innovative designs.

In response to a global pandemic like COVID-19 pandemic, the World Health Organization (WHO) has recommended that all member states provide universal access to public handwashing facilities. Hence, WASH intervention programmes have focused on handwashing as a part of pandemic response throughout the globe in public places and institutions such as government buildings, markets, schools and health care facilities.

Educational and childcare institutions like nurseries, preschools, primary and secondary schools should encourage the development of hygiene practices such as handwashing to become life-long habits apart from enforcing hand hygiene as a pandemic response. Yet the provision and maintenance of adequate WASH infrastructure remain a challenge in schools worldwide. Dirty and non-functional washing facilities, and unavailability of soap and adequate clean water often hinder children from washing hands during school hours.

40%

OF THE WORLD'S POPULATION,
or 3 billion people,
do not have a handwashing facility
with water and soap at home.
Nearly three quarters of the people
in low income countries lack
basic handwashing facilities
at home.

47%

OF SCHOOLS
lack a handwashing facility
with water and soap
affecting 900 million
school-age children.

16%

OF HEALTH CARE FACILITIES,
or around 1 in 6,
have no hygiene service,
meaning they lack hand hygiene
facilities where patients receive care,
as well as soap and water
at toilets.

(UNICEF and WHO, 2020) [2].

CONTEXT // REFUGEE CRISIS IN UGANDA

Uganda has a long history of hosting refugees, providing a safe and stable sanctuary to populations fleeing from war in neighbouring countries including South Sudan, Burundi, Democratic Republic of Congo (DRC), Somalia, Eritrea, and Rwanda. According to UNHCR, Uganda is currently the fourth largest host country in the world after Turkey, Colombia and Pakistan [5].

Currently hosting more than 1.4 million refugees (with the majority coming from South Sudan, and over 80% being women and children under the age of 18), Uganda is one of the pilot countries to implement the Comprehensive Refugee Response Framework (CRRF). Uganda has already made great strides in the implementation of the CRRF through the development of integrated refugee response plans. The Water and Environment Sector Refugee Response Plan (WESRRP) was developed in 2019 and focuses amongst other objectives on providing sustainable water, sanitation and hygiene services to refugees and host communities alike (GIZ, 2020) [6].

Around 45.5% of the refugee host communities have access to handwashing facilities in 2019. In both refugee settlements and host communities, there is absence of a harmonized and contextualized behaviour change communication framework for hygiene awareness initiatives and this slows down the adoption of positive hygiene practices. The challenge is compounded by limitations in hygiene related supplies such as soap with 50% of refugees in West Nile refugee settlements reporting inability to access the supplies due to household financial situations. Knowledge levels on handwashing are relatively high as per multi sectorial needs assessment for refugees (77% after defecating, 76% before eating) and host community households (71% after defecating, 87% before eating) (Ministry of Water and Environment (MWE), 2019) [7].

Imparting knowledge and skills to local artisans is a potential motivator to ensuring sustainable access to functional handwashing facilities (water, soap, ash/pumpkin leaves) whose absence is a barrier to improved handwashing (Oxfam, 2018)⁸. Hence, handwashing stations are seen as a critical factor in increasing handwashing behaviour in refugee settlements located in West Nile.

The GIZ WatSSUP programme, funded by BMZ, is working to ensure sustainable water and sanitation services in selected refugee settlements and host communities in Northern Uganda. The programme operates on the nexus of humanitarian and development work, taking on a multi-level approach to tackle water and sanitation challenges for both refugee and host communities.

Following the global COVID-19 outbreak in 2020, the WatSSUP programme embarked on several COVID-19 pandemic response measures in partnership with the District Local Governments of Arua (including the new districts of Madi Okolo and Terego) and Yumbe. The main partners are the District Water and District Health Offices (DWO and DHO). One of the core areas of COVID-19 pandemic response being promoted by the WatSSUP programme are handwashing facilities i.e. the WASHaLOT 3.0.

Sanitation for Millions, a global initiative of GIZ also operates in Uganda with funding from from BMZ, the Bill & Melinda Gates foundation, the Hungarian Ministry of Foreign Affairs and Trade, the British solidarity fund Water Unite and the Inter-American Development Bank with the main objective to improve access to safely managed sanitation and the hygiene situation especially in considering the needs of disadvantaged and vulnerable groups. Besides others, the programme focusses on improvement of sanitation and handwashing facilities and building strong hygiene routines in public institutions especially schools and HCFs with special attention to the needs of girls and disabled students.

Since the outbreak of the COVID-19 pandemic in early 2020, awareness raising and sensitisation on handwashing increased throughout the country. As a result, a variety of handwashing technologies have been introduced and installed by various organisations and a general improvement in handwashing practice in the country has been registered. Interventions include installation of handwashing facilities in buildings, such as a school or health care facilities and public spaces like markets and community centres in a rapid manner, without consideration of long-term sustainability. Hence there is a considerable risk that many handwashing facilities will no longer be functional due to lack of operation and maintenance in the medium to long run [9].

Despite the registered improvement in handwashing behaviour levels in the country, health risks remain high in refugee settlements and host communities as well as HCFs and other public institutions. Therefore, there is need for scaled up and sustainable access to functional clean handwashing facilities.

TAF // TECHNOLOGY ASSESSED

The WASHaLOT 3.0 handwashing technology was selected by the WatSSUP programme to be promoted and up scaled in its project areas in West Nile Uganda. The WASHaLOT 3.0¹ is the third iteration of WASHaLOT group handwashing facilities that has been tested and used in various countries and settings since 2013. It is a prefabricated system produced as both short (1.5m) and long versions (3m) serving 10 and 20 users to wash hands respectively. In 2020, adjustments were recommended to the WASHaLOT for it to be used during a pandemic like COVID-19. The adjustments include physical distancing guidelines (with rubber sleeves/foil and floor markings) indicating 2 users per short WASHaLOT and 4 users per long WASHaLOT. Stickers can indicate open and closed outlets.

Originally, the WASHaLOT was developed by the GIZ Regional Fit for School Programme together with the Sustainable Sanitation Programme of GIZ in cooperation with the University of Applied Sciences Potsdam as a durable, low-cost and water-saving handwashing facility technology and has been promoted in schools in the Philippines, Indonesia, Laos, Cambodia, Nepal as well as South Sudan and Guinea. Handwashing facilities like the WASHaLOT are designed to enable both group handwashing and individual handwashing at any critical time.

The WASHaLOT was first introduced and promoted in Uganda by the GIZ global initiative. Results from Health Care Facilities, schools and public buildings, Arua, Yumbe, Lira, in partnership with Kampala Capital City Authority (KCCA) in 2018, as one of the several interventions towards improving WASH in public schools in Kampala and later in early 2020 in Apac before COVID -19 pandemic (Figure 3). Over years, handwashing in schools was lagging due to a high failure rate of existing handwashing facilities and high costs of water supply. Since its introduction, the WASHaLOT has been appreciated by the local authorities and users as one technology that will help fill the aforementioned gaps. So far, over 120 WASHaLOTs have been installed in schools in Kampala and Apac District in Northern Uganda and a local production and supply chain has been established.

¹ Hereafter referred to as WASHaLOT.

WASHaLOT design in Uganda // Figure 3



WASHaLOT station in Northern Uganda // Figure 4



KEY FEATURES // WASHaLOT 3.0 AS INSTALLED IN UGANDA

A WASHaLOT consists of a 110 mm diameter blue HDPE water reservoir pipe fitted with water-saving stainless steel outlets. The WASHaLOT main pipe can be long (3m length) or short (1.5m length). The long WASHaLOT pipe is usually supported by three GI standpipes, while the short one requires two standpipes.

> WATER CARRYING HDPE PIPE

The long WASHaLOT pipe can carry up to 28 litres of water which can serve up to 150 handwashing events. The short pipe can hold 12 litres of water and can serve up to 80 handwashing events. The WASHaLOT HDPE (High Density Polyethylene) pipe can either be connected to the existing piped water supply or manually refilled, making it suitable for locations with/without piped water systems.

> WATER-SAVING OUTLETS

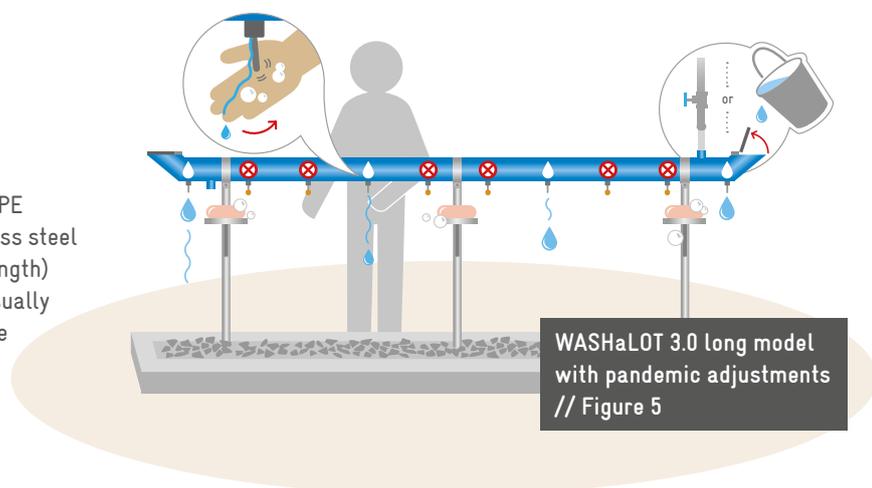
The stainless-steel water outlets, compared to conventional taps, deliver small amounts of water when manually pushed to the side. These outlets are easy to handle and help avoid wasting water. For example, children often do not close the tap when lathering their hands with soap, leading to water waste with conventional taps. The amount of water saved with WASHaLOT outlets is significant since 125 ml of water is needed for a handwashing event compared to 1200 ml of water for conventional handwashing (Siewert, 2015) [10].

> TIME-SAVING HYGIENE ACTIVITIES

WASHaLOT handwashing is not time consuming: The long pipe can serve up to 20 children/5 to 10 adults² simultaneously. However, during the ongoing pandemic, and in adherence to set health guidelines, it is recommended to limit usage to 3 to 4 people per long WASHaLOT and up to 2 people per short (1.5 metres) WASHaLOT.

> LOW COST EFFICIENCY OF TECHNOLOGY, MATERIALS AND MAINTENANCE

Production and operation costs of WASHaLOT are economical compared to conventional group handwashing stations³ in Uganda. Hence the device can be considered cost effective. Usage of local materials (mostly) in design have also made it cost effective. In general, operating costs are low due to limited water consumption and high durability of parts.



> LOCAL PRODUCTION

Local production fosters development of local expertise for production and knowledge on repair and maintenance and strengthens local markets and the local economy. Free replication of WASHaLOT is possible thanks to its open source access to production guides and drawings. WASHaLOTs are locally prefabricated with simple design adjustments suited to the Ugandan setting as most materials are available locally and can be quickly installed. They are also easy in maintenance and repair. Therefore, the WASHaLOT qualifies as appropriate technology for public places, institutions and emergency settings such as refugee settlements.

> FAST ACCESS WHEN NEEDED

In emergency scenarios, water scarcity is often a problem and hygiene activities like handwashing are of utmost importance. The WASHaLOT could be made available as a mobile version with legs that are not fixed to the ground. Hence WASHaLOTs can be transported to an emergency location easily. The COVID-19 pandemic has reiterated the importance of handwashing and created awareness among the population. The WASHaLOT offers fast access to handwashing facilities for multiple users at a time even when introducing physical distancing guidelines with markings and stickers on outlets that are not to be used (Figure 5).

> ENVIRONMENT FRIENDLINESS AND APPEARANCE

One of the key WASHaLOT additions in Ugandan context is the drainage platform and (at the assessed locations) a soak pit. The drainage platform is a brick box containing aggregates with aim of preventing the wash water from ponding on the soil surface and splashing onto the users.

² Children with small body frame occupy smaller space than adults. Also, the long WASHaLOT can accommodate up to 10 adults simultaneously if 5 adults stand on one side of the device and 5 on the other side facing each other. This may not be required as it is unlikely to have 10 adults washing hands at the same time in a public institution contrary to schools.

³ Concrete basin with taps connected to water supply.

3. TAF ASSESSMENT OF WASHaLOT IN UGANDA

TAF // OBJECTIVES

To assess the future applicability, scale up potential and appropriateness of the WASHaLOT in Northern Uganda, the TAF has been applied. The TAF helps to understand if any technology implemented at pilot level meets the criteria for further implementation and scaling-up, by assessing the technology through the perspective of three key stakeholder groups engaged with the implementation of the technology: user/buyer, producer/provider and regulator/facilitator/investor. This report captures the findings of an evaluation of the WASHaLOT in the capital region Kampala as Arua, Yumbe, Apac and Lira districts. The settings included schools, health care facilities and public buildings.

The assessment is divided into three settings:

SETTING 1: in schools in the capital city Kampala as a regular WASH measure to improve access to handwashing facilities among children.

SETTING 2: as a pandemic response measure in HCFs, public buildings and schools in Northern Uganda (Arua, Yumbe, Lira).

SETTING 3: installed in schools in Apac (Northern Uganda) as a regular WASH measure to improve access to handwashing facilities among children.

The WASHaLOTs have been in use and operating for different time periods under different settings. For the schools in Kampala, most devices have been operational since 2018 (over 2.5 years) whereas for Northern Uganda, the existing devices in schools, institutions and public places have been operational for two to three months (Figure 6). By selecting the various settings in both Kampala and the North, it is possible to assess the WASHaLOT as a device used long and short term.

OBJECTIVES OF THE TAF APPLICATION

- > Assess the need and up-scaling potential for the WASHaLOT technology in Northern Uganda in different settings (health care facilities, schools and public places).
- > Assess the design, circumstances of production, promotion and usage of the technology in Kampala and Northern Uganda.
- > Assess the key features of the WASHaLOT in the Ugandan setting to establish if they can be confirmed for the Ugandan context.
- > Share experiences about the WASHaLOT in different settings, including potential challenges and further necessary improvements needed.
- > Assess the potential of the WASHaLOT to address bottlenecks in different settings and institutional set up for the scaling-up of WASHaLOT.
- > Assess the key features of the WASHaLOT in the Ugandan setting to establish if they can be confirmed for the Ugandan context.
- > Assess the readiness of the Northern Region in Uganda to recognize the technology as a viable handwashing device.



WASHaLOT installation timeline // Table 1

SETTING	INSTALLATION YEAR	TIME IN USE AS OF NOVEMBER 2020
SETTING 1		
Kampala schools // Sanitation for Millions 1st phase	2018/2019	1 to 2 years
Kampala schools // Sanitation for Millions 2st phase	2020	Since October 2020
SETTING 2		
Health care facilities in Arua	2020	Since September 2020
Public buildings in Arua and Lira	2020	Since September 2020
SETTING 3		
Apac Schools	2020	Since October 2020

TAF // METHODOLOGY

Questionnaires were adapted to the current Ugandan context based on the questionnaires used for the WASHaLOT 3.0 TAF assessment in the Philippines as well as the original TAF materials (see pages 34 to 39).

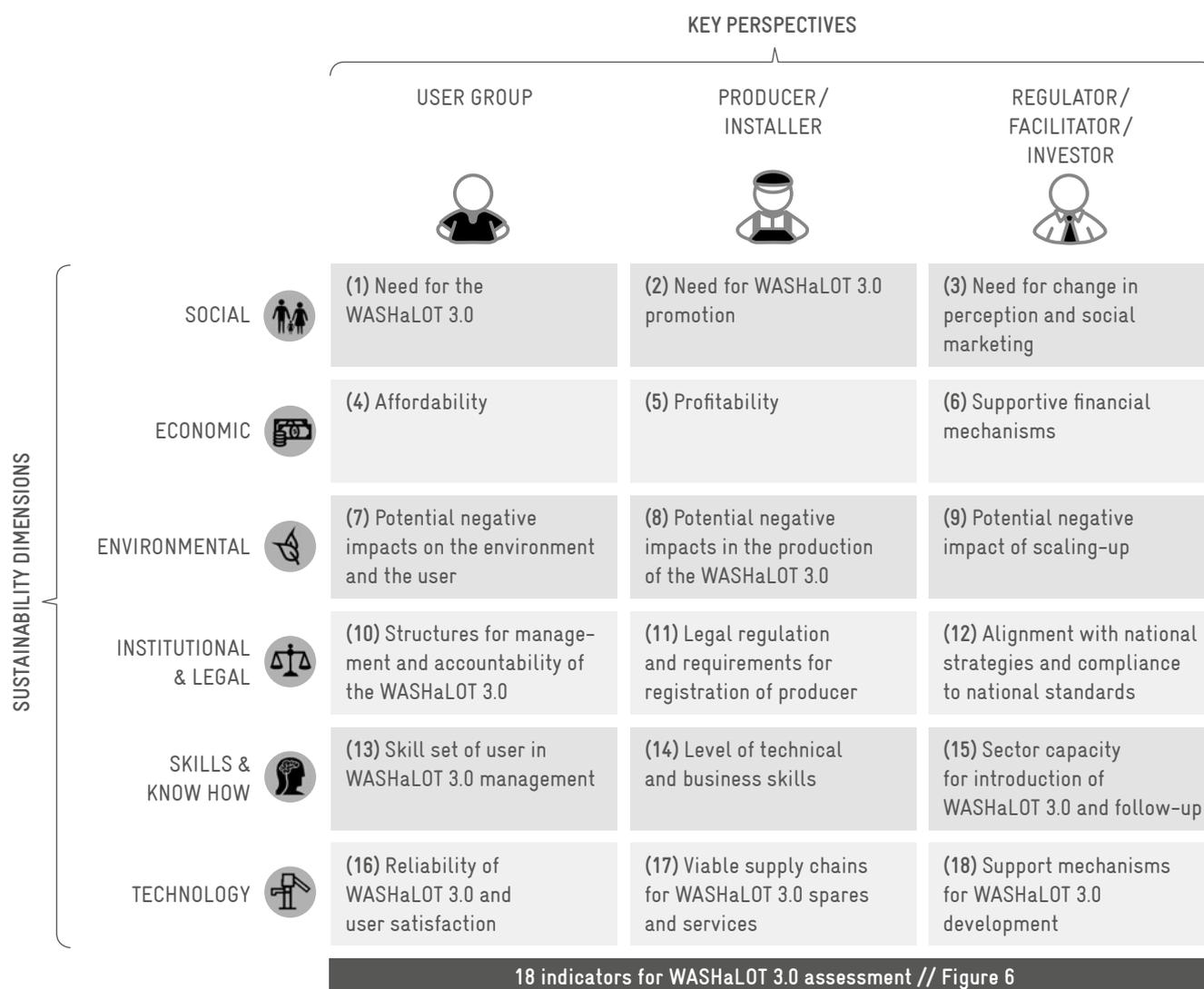
Questions were divided into six sets for three key stakeholder groups:

- (1) user group (schools, HCFs, public buildings);
- (2) producer/installer;
- (3) and regulator/facilitator/investor.

Each set of questions was formulated in line with the six sustainability dimensions:

- > Social
- > Economic
- > Environmental
- > Institutional & legal
- > Skills & know how
- > Technology

Along these six sustainability dimensions, specific indicators were developed on each key perspective to further narrow areas of the assessment. It is important to understand that each of the indicators is of specific relevance (refer to page 42) to determining the applicability, scalability and sustainability of the technology being assessed.



TAF // SETTINGS

The assessment was conducted as a series of interviews with stakeholders on different key perspectives during October and November 2020 observing physical distancing and masks. Table 2 represents the various subsets that were interviewed in different settings.

The interviews were divided into three phases:

PHASE 1: assessment of schools in Kampala city under Sanitation for Millions programme

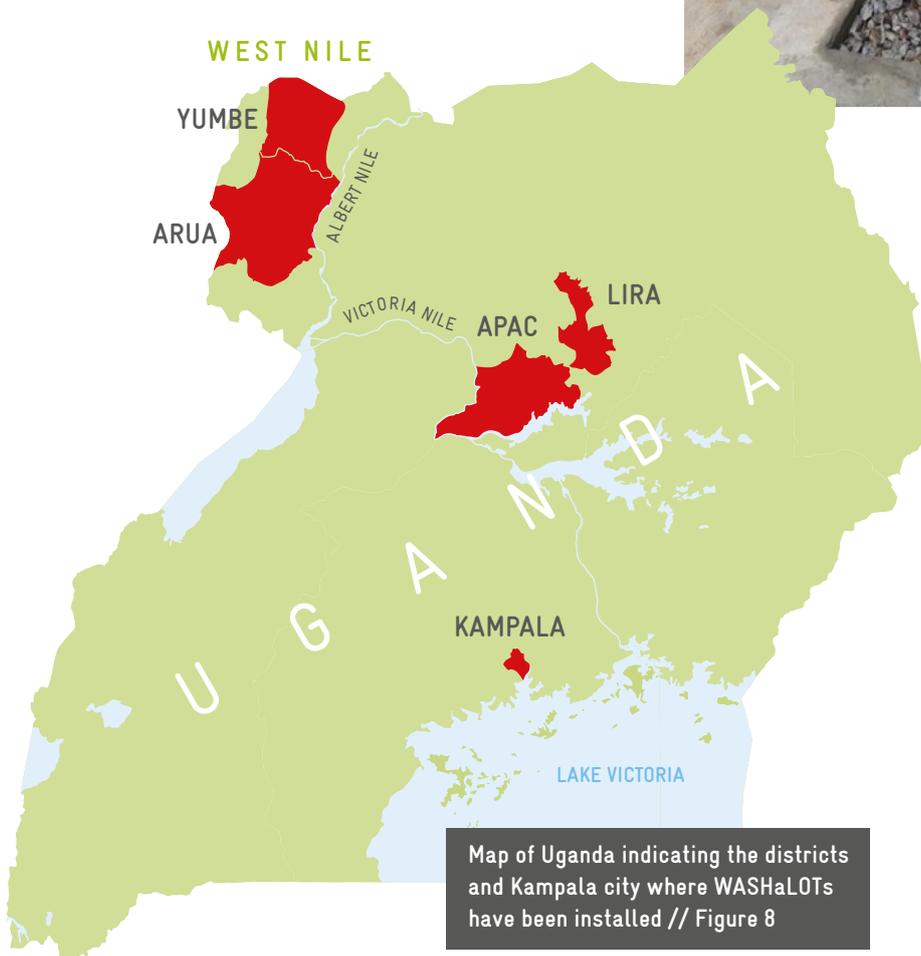
PHASE 2: assessment of public buildings, HCFs and prospective schools as a pandemic response in the context of refugee settlements and host communities in Arua, Yumbe and Lira under WATSSUP programme

PHASE 3: assessment of schools in Apac under Sanitation for Millions programme

A detailed list of interviewees is available under page 40.



WASHaLOT station with nudges (footprints), Northern Uganda // Figure 7



Map of Uganda indicating the districts and Kampala city where WASHaLOTs have been installed // Figure 8

WASHaLOT station short model
in a refugee settlement,
Northern Uganda // Figure 9



List of stakeholders interviewed in Uganda // Table 2

REGION/DISTRICT	USER	PRODUCER/INSTALLER	REGULATOR/FACILITATOR/INVESTOR
SCHOOLS			
Kampala (8)	School principal, sanitation teacher and 2 students	Allied Industries	REGULATOR/FACILITATOR: Kampala Capital City Authority INVESTOR: GIZ Sanitation for Millions
		Makerere Mechanical Workshop	INVESTOR: Ministry of Education and Sports
Apac (3)	School principal, sanitation teacher and 2 students	Allied Industries	REGULATOR/FACILITATOR: Kampala Capital City Authority
		Makerere Mechanical Workshop	INVESTOR: GIZ Sanitation for Millions
Arua (2)	School principal, sanitation teacher and 2 students	Arua Technical Institute Ragem	INVESTOR: GIZ WatSSUP
HEALTH CARE FACILITIES			
Arua and Yumbe (3)	Health care facility staff	Hand Pump Mechanics Association, Arua	REGULATOR: Northern Umbrella for Water and Sanitation INVESTOR: GIZ WatSSUP
PUBLIC BUILDINGS AND OFFICES			
Arua, Yumbe and Lira (3)	Staff and visitors of the buildings	Hand Pump Mechanics Association, Yumbe	REGULATOR: Water and Sanitation Development Facility INVESTOR: GIZ WatSSUP

4. SCORING

PRESENTATION AND DISCUSSION

After conducting the interviews, a preliminary scoring was done according to the responses provided. Due to the COVID-19 lock down situation in Uganda the scoring workshops were done through one-to-one feedback phone calls. During the feedback phone calls, it was assured that all expressed views of interviewees had been represented in the assessment. Special attention was given to identify potential impediments to the scaling-up process and sustainability of the WASHaLOT. The scoring process used a standard number system from 0-5 which was converted into standard traffic light system to score each of the 18 specific indicators with respect to scalability and to present the view of all three stakeholder groups. In case the scores of the participants were divided, an average of the scores including feedback on potential impact or hindering characteristics were taken into consideration. Unclear information was resolved during the scoring feedback calls.

Traffic light system used to score TAF indicators // Figure 10

-  High value, neutral or positive, supportive characteristics
-  Potential impact, could become critical, needs follow-up
-  Low value, negative, critical, hindering characteristics
-  Unclear information, should be clarified

WASHaLOT station in a Health Care Facility in Yumbe District // Figure 11



RESULTS

Results of TAF per setting based on key features // Table 3

FEATURE:	SETTING 1 // KAMPALA SCHOOLS	SETTING 2 // NORTHERN UGANDA		SETTING 3 // NORTHERN UGANDA SCHOOLS
		HCFs	PUBLIC BUILDINGS	
HPDE pipe	+	0	0	+
Water saving outlet	+	0	+	+
Time saving	+	+	+	+
Low cost efficiency	+	+	+	+
Local production	+	+	+	+
Fast access	+	+	+	+
Environment friendliness and appearance	+	+	+	+

All settings appreciate the key features of the WASHaLOT. However, when it comes to water access, piped connection is preferable although the pipe can store water. In HCFs and public buildings where there is floating population of visitors, frequent and irregular refilling may be needed. Water saving potential of the WASHaLOT is appreciated in all settings except HCFs. In HCFs, the visitors appreciate washing hands with more water due to the perception that more water pressure can clean hands better. Also, in HCFs, water supply is free compared to schools that must bear the operational costs and water bills.

SIMILARITIES

All settings prefer WASHaLOTs with concrete based fixed to the ground over mobile WASHaLOTs to prevent theft and vandalism. Some schools and HCFs, where there are resources to lock mobile WASHaLOT, are open to the idea of having additional WASHaLOTs with mobile legs for specific areas. In schools, the mobile WASHaLOTs are perceived useful during events and on the playground. HCFs are open to having additional mobile WASHaLOTs in the maternity and outpatient wards. All settings like the look and design of the WASHaLOT. Due to its unique look, one-time visitors in HCFs and public buildings are unaware that the WASHaLOT is a group handwashing station – thus advise and visual aids are required. All settings have the capacity to operate and maintain the WASHaLOTs installed. However, all maintenance staff should be trained appropriately.

DIFFERENCES

There are significant differences between adult and child users. The WASHaLOT is used by adults in HCFs and public buildings. These users could be mostly one-time users who visit the buildings as patients or clients. A one-time user may not be able to appreciate the water saving potential or the group handwashing feature of the WASHaLOT. However, staffs working in public buildings and HCFs would be able to appreciate these features due to frequent usage.

Children on the other hand are taught the importance of handwashing and practice handwashing in an orderly manner under adult supervision. This instils a sense of routine and appreciation for all features of the WASHaLOT.

The WASHaLOT although cost efficient, is more expensive in the Northern Region than in Kampala due to transport costs and centralised production. A production facility in the North during scale up would prove fruitful.

Detailed results in terms of sustainability criteria for every setting is available on the following pages.

SETTING 1 // SCHOOLS IN KAMPALA

Results from
school settings,
Kampala // Figure 12

	USER	PRODUCER/ INSTALLER	REGULATOR/ FACILITATOR/ INVESTOR
SOCIAL	(1) +	(2) +	(3) +
ECONOMIC	(4) 0	(5) 0	(6) +
ENVIRONMENTAL	(7) +	(8) +	(9) +
INSTITUTIONAL & LEGAL	(10) +	(11) 0	(12) 0
SKILLS & KNOW HOW	(13) +	(14) +	(15) +
TECHNOLOGY	(16) 0	(17) +	(18) +



SOCIAL

SUSTAINABLE
DIMENSIONS,
KEY PERSPECTIVES,
INDICATORS &
SCORING

USER

Schools generally find the WASHaLOT handwashing station convenient to use. Time saving potential makes the WASHaLOT a great choice for a group handwashing station and the users can see the benefits in terms of time consumption. Users mention visible improvement in hand hygiene for the school children as they have been found to have cleaner books, notebooks and uniforms as they have cleaner hands. Peer to peer learning has been observed among students while using the WASHaLOT. Most schools see physical distancing measures during the COVID-19 pandemic as a challenge and a disadvantage while using the WASHaLOT. They feel that the full potential of WASHaLOT is reduced as fewer kids get to wash their hands at the same time. Some schools have control measures in place to ensure physical distancing when using the WASHaLOT (such as: footstep markings for users and phased class break and lunch sessions at school) while some others feel that they still need distancing guidelines for the station. Due to physical distancing measures, most schools feel that they need to have more WASHaLOTS installed to meet the demands. Location of the WASHaLOTS play a key role on their usage and success (imparting behaviour change). In addition, it was also appreciated that provision of functional handwashing stations as COVID-19 measure should be accompanied with continuous awareness raising, temperature checks, wearing masks, physical distancing as well as a clear reporting framework and responsive health care system to effectively control the spread of the pandemic.

SCORING 

PRODUCER / INSTALLER

The producers perceive the WASHaLOT as a successful technology that can be profitable in the long run. They are being approached by customers for orders due to its advantages over other handwashing facilities (durability, water saving, multiple user technique, compliance with national guidelines for WASH in schools etc.,) and increased COVID-19 awareness. The highest demand is from institutions, both public and private. However, the nozzles and plastic covering that are imported from Kenya and other countries have been difficult to procure due to restrictions in travel because of the pandemic.

SCORING 

REGULATOR / FACILITATOR / INVESTOR

The regulators/investors (KCCA/ GIZ) feel that the WASHaLOT has been welcomed in schools and has been successfully operating in the school setting. There have been appropriate guidelines and standard operating procedures for using the handwashing stations during COVID-19 and during reopening of schools.

SCORING 

ECONOMIC

USER

In general, schools have an impression that the WASHaLOT does not have high water consumption. Most schools have adequate budget for provision of soaps under normal usage conditions. During the COVID-19 pandemic the children have been asked to contribute extra soaps to meet the high demand for frequent handwashing with soap and sanitizing. However, the schools do not want to burden parents for extra financial contributions for more soaps due to dire economic conditions. Therefore, regulators and investors need to ensure continuous supply of soap during emergency situations. In terms of WASHaLOT procurement, installation and minor repairs, public schools usually do not have adequate WASH budget funds from the government and are often dependent on private funds from NGOs and churches or contributions from parents. For schools which can attempt to collect external funding in this regard towards e.g., a concrete base, bearing full costs of a few WASHaLOTs would lead to a considerable strain in their already squeezed budget. The school management could only try to reallocate funds in such cases, and it is highly unlikely.

Therefore, scaling-up the technology under normal conditions would be possible only through subsidies from the Government and development partners. During emergencies, extra attention must be paid to funds needed by schools.

SCORING 0

PRODUCER/INSTALLER

The WASHaLOT is considered cost effective due to lower water consumption but the production cost has been quite high due to economies of scale. It is anticipated that once the demand increases further, the production costs would go down. Though the costs are higher compared to traditional handwashing systems, the WASHaLOT offers group handwashing services and hence could be more economical in the long run. The producers are still unable to produce and supply one or two WASHaLOTs to an interested customer. They usually handle bulk orders which so far have only come from ongoing programmes and projects. Value Added Tax (VAT) is considered as a draw back as most customers are unwilling to pay it putting the producer at risk. VAT is mostly hidden in the costs usually and quoted as lump sum. Most of the procurement done by the investor/ facilitator (GIZ/ KCCA) was exempted for VAT. But other private companies, institutions and buyers are subjected to VAT which increases the overall cost of the WASHaLOT. VAT exempt organisations can procure WASHaLOT at lower costs and this is not accepted by other customers who need to pay VAT.

SCORING 0

REGULATOR / FACILITATOR / INVESTOR

KCCA has been advocating the WASHaLOT to other donors providing WASH facilities in schools because it's proven to be suitable for schools. The WASHaLOT have been fully subsidised for public schools that are a part of intervention programmes. However, private schools as well as other public schools that are not part of the intervention programmes have also shown interest in the WASHaLOT. There is still a challenge in procurement of single WASHaLOTs from the producers which has proven to be a setback in widespread use of the technology. The concrete base provided in the pilot schools may not also be possible in rural context due to limited funds and alternative designs could be considered

SCORING +

ENVIRONMENTAL

USER

The WASHaLOT has received positive responses with respect to environment protection and is not considered a threat in any way. The only minor concern was the direct infiltration of grey water in the ground through the soak pit. There is an assumption that grey water may contaminate the ground-water when infiltrating into the ground.

SCORING 

PRODUCER/INSTALLER

There is no seen impact to the environment in the production of WASHaLOTs. The waste is minimal during the fabrication process and plastic scrapes are recycled.

SCORING 

REGULATOR/FACILITATOR/INVESTOR

There are no negative environmental impacts. The problem of grey water discharge has been tackled with designing and installing a concrete base and an infiltration pit.

SCORING 

INSTITUTIONAL & LEGAL

USER

All schools have appropriate structures for the installation and maintenance of WASHaLOT stations. Some schools have dedicated cleaning staff while other some schools appointed groups of students to oversee cleaning the stations under the supervision of teachers which also increases ownership.

SCORING 

PRODUCER/INSTALLER

The producers of the WASHaLOT are accredited engineers and do not have any legal issues in producing the WASHaLOT since the designs are available via open access. However, the device does not have any government certification or validation specifically catering to the producers yet. When several industries start producing the WASHaLOT, the producers feel that the quality of the device should be protected with standardised production process. There have been counterfeit products and devices appearing in the market.

SCORING 

REGULATOR/FACILITATOR/INVESTOR

The Ministry of Education and Sports (MoES) together with the Ministry of Water and Environment (MWE) and the Ministry of Health have developed guidelines for WASH in schools including operation and maintenance for WASH facilities. The WASHaLOT is compliant with the national standards for WASH in schools set by the MWE and Three Star Approach⁴ in Uganda. The standards advocate for group handwashing facilities in schools which the technology offers. However, the MoES is still lacking resources to implement these guidelines nationally.

SCORING 

⁴ The Three Star Approach for WASH in Schools is designed to improve the effectiveness of hygiene behaviour change programmes for children and complements UNICEF's broader child-friendly schools initiative and GIZ's 'Fit for School' approach, which promote safe, healthy and protective learning environments.

SKILLS & KNOW HOW

USER

There were no drawbacks reported with respect to the O&M of the handwashing stations. The schools find the WASHaLOT easy to maintain and clean.

SCORING 

PRODUCER/INSTALLER

The producers possess the necessary skills and knowledge and are continuously innovating the WASHaLOT to make it more suitable for the Ugandan context. For example, the producers are in touch with manufacturers in Kenya to produce a much more durable version of outlet covers.

SCORING 

REGULATOR/FACILITATOR/INVESTOR

The regulator KCCA and GIZ as investor have the necessary resources and mechanisms in place for operation and maintenance of WASHaLOTS in schools. The line ministry however lacks capacity and resources at operational level for the roll out of standard operating procedures (SOPs) and guidelines.

SCORING 

TECHNOLOGY

USER

The users in schools find the technology and design unique. In schools where the WASHaLOT is connected directly to the piped water supply, the users are very satisfied. In other cases, refilling is done by allotted staffs or pupils. However, connecting the stations to water supply seems to be more convenient from the user perspective. Most users find the blue colour of the pipe attractive and pleasant. The stations are quite stable but rusting, falling out/loss of nozzles have been registered in some instances. Due to the pandemic, there have been concerns and fear among students in touching the WASHaLOT. Hence some schools feel that a foot pedal would be more convenient. Schools prefer WASHaLOTS distributed with a concrete base and an infiltration pit. Mobile WASHaLOTS that are proposed in the future not popular and not the first choice. Some schools, however, are open to the idea.

SCORING 

PRODUCER/INSTALLER

The producers offer backstopping services, monitoring, operation and maintenance services, and necessary mechanisms for the introduction of the technology. The producers usually replaced broken nozzles or outlet covers.

SCORING 

REGULATOR/FACILITATOR/INVESTOR

The regulators/facilitators/investors have supportive structures for innovation and scaling-up. The ministries have also been working with each other to promote the WASHaLOT.

SCORING 

RECOMMENDATIONS

USER

A pandemic like COVID-19 has brought constraints in using the WASHaLOT to its full potential. Guidelines on usage of the WASHaLOTs and more sensitisation is needed to prevent misinformation on risk of disease spread through hand contact with the nozzles. Supply of only WASHaLOT pipe and legs without a provision and installation of the platform might not be successful. A durable base adds value to the usage of the WASHaLOT as it minimises risk of theft. However, in areas where vandalism is common, it is necessary to ensure maximum security (fencing/walls, availability of school guard) is guaranteed prior installing WASHaLOTs. The regulator and investor should give special attention to supply of soaps during a pandemic and until the economic situation is back to normal. Galvanised iron should be used on the legs to prevent rusting and spare nozzles should be made available to the school management during distribution/installation. There is need to train local masons/plumbers on quick fixes of the WASHaLOT and increase stocking of spares within the region for timely repairs and ensure sustainable service delivery by the technology.

PRODUCER / INSTALLER

Although the WASHaLOT conforms to the national guidelines and the three-star approach promoted by the Ugandan government for WASH in schools, the producers need government validation as certified producers of the WASHaLOT to gain the trust of customers and protect the quality of the device supplied on the market. The WASHaLOT design (height, no. of outlets, base) also needs to be modified according to customer needs and to be certified by the Appropriate Technology Centre (ATC) (Refer to Table 5 on certification process). Producers should also be able to access the mandate from the MWE recommending the usage and scaling-up of WASHaLOT in Uganda.

REGULATOR / FACILITATOR / INVESTOR

Although guidelines for operating WASH facilities are in place, there might be gaps and bottlenecks in implementation as the users are not aware of these measures completely. Scaling-up the WASHaLOT should go together with strengthening the institutional framework of regulators who monitor the WASH facilities in schools. The concrete base installed in pilot schools have proven effective in discharging/managing the grey water with no stagnation of water around the handwashing stations. Other new leg models may not have the same impact environmentally. It would be necessary for newer models of the base to fulfil all the necessary criteria (such as infiltration of grey water, protection against theft and stability) as the concrete base. Capacities at national level could be improved by providing trainings both at national and regional level.

WASHaLOT certification in Uganda through Appropriate Technology Centre // Table 4

STEP 1

Inform the ATC about the new technology, the context of usage, the contributions the technology have made to the WASH sector and apply for a certification.

STEP 2

The ATC will allocate a team to use and test the technology on ground.

STEP 3

The ATC will prepare an assessment report for the MWE.

STEP 4

The ATC presents the findings to the steering committee at MWE with recommendations*.

STEP 5

Based on the ATC's recommendation, the MWE approves the technology and adopts the technology for scaling-up.

* If there are any adjustments or recommendations, the ATC informs the producer and investor accordingly.



SETTING 2 // PANDEMIC RESPONSE IN HCFs, PUBLIC BUILDINGS AND SCHOOLS⁵ IN NORTHERN UGANDA – WATSSUP (ARUA, YUMBE AND LIRA)

Results from health care facilities,
public buildings and schools,
Arua, Yumbe, Lira // Figure 13

	USER HFCs	USER PUBLIC BUILDINGS	USER SCHOOLS	PRODUCER/ INSTALLER	REGULATOR/ FACILITATOR/ INVESTOR
SOCIAL	(1) 0	(2) 0	(3) +	(2) +	(3) +
ECONOMIC	(4) +	(5) +	(6) 0	(5) 0	(6) 0
ENVIRONMENTAL	(7) +	(8) +	(9) +	(8) +	(9) +
INSTITUTIONAL & LEGAL	(10) +	(11) +	(12) +	(11) +	(12) 0
SKILLS & KNOW HOW	(13) 0	(14) 0	(15) +	(14) +	(15) 0
TECHNOLOGY	(16) +	(17) +	(18) +	(17) +	(18) 0

⁵ Schools were interviewed as a part of prospective users for future installations.



SOCIAL

SUSTAINABLE
DIMENSIONS,
KEY PERSPECTIVES,
INDICATORS &
SCORING

USER

HFCs // In HFCs, the officers in charge do not see any social barriers in the usage of the WASHaLOT but the users (staff, patients & caretakers) still do not recognise the device as a handwashing station because it is still new and unique. Most users still do not know how to use the WASHaLOT. Also, the users prefer WASHaLOTS that are connected to the main piped water supply to avoid the need to refill frequently. The existing WASHaLOTS at the HFCs are located at the entrances of the HC units. They would also prefer additional WASHaLOTS outside toilets, maternity care units, isolation units and outpatient departments. The additional WASHaLOTS could be mobile.

SCORING 0

PUBLIC BUILDINGS // In public buildings, the WASHaLOT as a new handwashing device in the North has positive views on social aspects and effectiveness as a group hand washing device. The structure is seen as suitable for busy areas like markets, schools, city centre, hospitals and public buildings. However, the unique design of the WASHaLOT has not yet been understood in the region. Also, users and maintenance staff feel that the WASHaLOT would be more convenient if it is connected to water supply directly.

SCORING 0

SCHOOLS // Schools have a positive impression of the WASHaLOT and feel that a group handwashing station would avoid queuing and promote a healthy handwashing behaviour. However, this technology has not yet been introduced to schools in Arua. They also shared grievances of high failure rate of foot pedalled technologies that were introduced in the schools during the COVID-19 pandemic as a response measure.

SCORING +

PRODUCER / INSTALLER

The producers feel that the market is currently small and can grow as there is a demand after the pilot installations in the region. Demand is also considerably seen in schools where large groups of children wash their hands every day. People have expressed interest in having the WASHaLOTS installed at their private premises. However, this might be too expensive for individuals and WASHaLOTS installation for small communities may be more cost effective. Spare parts that are not available locally are expensive. Handwashing is currently being promoted as a control measure for COVID-19 and the WASHaLOT technology could help serve the purpose especially in institutions. The only challenge is the fear among users touching the nozzles to wash their hands.

SCORING +

REGULATOR / FACILITATOR / INVESTOR

The regulators feel that the technology is simple and reliable. However, in the light of SOPs for COVID-19 response measures, it is still unclear how to ensure physical distancing among users when using the WASHaLOTS.

SCORING +

ECONOMIC

USER

HFCs // The HCFs dependent on NGOs to provide handwashing facilities. In Arua and Yumbe, Water Mission, an implementing partner of UNHCR for provision of handwashing facilities in HCFs is seen as the donor for additional WASHaLOT installations in future, if needed. The supply of soap is budgeted for by the HCFs and available all year round.

SCORING 

PUBLIC BUILDINGS // The public buildings would be able to afford additional handwashing stations if the need arises. Soap and maintenance staff are available.

SCORING 

SCHOOLS // Considering that the schools visited during this assessment were within the refugee settlement areas, they would not be able to afford the WASHaLOT as they do not receive or budget for funds for such installations in their setting but they would ensure the availability of soap all through the year.

SCORING 

PRODUCER / INSTALLER

The WASHaLOT could be profitable for the producers and installers. The production is not done in the North, yet which adds transportation costs and leads to increased costs. Local innovations in fabricating the WASHaLOT have been suggested by HPMA in Arua. For example, they have proposed an alternative design where they use glue to join the corners at the ends of the WASHaLOT outlets because they do not have the machine that cuts the 90 degrees in the existing design. The producers are engaged in promoting, product development and after sale services.

SCORING 

REGULATOR / FACILITATOR / INVESTOR

There are several handwashing facilities implemented currently and the local regulators in the North are unaware of any supportive mechanism available for WASHaLOT. Also, the WASHaLOT have just been piloted in a few settings and have been operational for 3-4 months. Hence it is difficult to prove its effectiveness. Once proven effective, the regulators would be able to promote the handwashing station.

SCORING 

ENVIRONMENTAL

USER

There are no potential impacts to the environment due to the WASHaLOT in HCFs. However, the HCFs feel that it is important to have an infiltration base for the grey water to discharge. The WASHaLOT is also considered economical due to low water consumption and due its ability to serve many users simultaneously.

The users do not see any negative impact environmentally but feel that it is necessary to develop appropriate disposal/recycling guidelines for WASHaLOTs that have been completely worn out with time or vandalised beyond usage.

The schools do not see any potential negative impact to the environment.

SCORING: HFCs AND PUBLIC BUILDINGS  // SCHOOLS 

PRODUCER / INSTALLER

No negative environmental impact has been noted.

SCORING 

REGULATOR / FACILITATOR / INVESTOR

As WASHaLOT use has not yet been fully realised in Northern Uganda, it may be possible to determine the negative impacts⁶ the device poses to the environment with long term usage. However, if constructed well with a drainage system, there could be no negative environmental impacts.

SCORING 

⁶ Possible negative impacts listed on a separate table.

INSTITUTIONAL & LEGAL

USER

There are clear institutional set up and responsibilities for maintaining the WASHaLOT.

In public buildings, the setup and installation of the facilities in Arua district have been done through the Hand pump Mechanics Association and maintenance staff exist to operate and maintain the facilities.

The schools would be able to set up a structure for operation and maintenance. The students would be responsible for cleaning and filling the WASHaLOT.

SCORING: HFCs, PUBLIC BUILDINGS, SCHOOLS 

PRODUCER / INSTALLER

The Hand Pump Mechanics Associations (HPMA) of Arua and Yumbe district have been promoting the technology and installing WASHaLOTs. As a registered association, they are accountable to the district water offices. Hence, institutional structures exist.

SCORING 

REGULATOR / FACILITATOR / INVESTOR

The local regulators are unaware of SOPs for the WASHaLOT use during the pandemic. Although the device is recognised nationally under the Three Star Approach for WASH in schools, it has not yet been tested in other settings for adults' usage. The local regulators feel that there are still not enough trained personnel for installation, repairs, and provision of spare parts for WASHaLOTs in the Northern Uganda.

SCORING 

Potential negative environmental impacts of WASHaLOT // Table 5

SOLID WASTE

- > Plastic and metal waste from production
- > Material wastage from installation
- > Disposal of worn out WASHaLOTs

GROUND WATER POLLUTION

- > Grey water discharge from the WASHaLOT contaminating ground water in regions where the water table is high

CO₂ EMISSIONS

- > Emission from importing WASHaLOT parts from other countries

SKILLS & KNOW HOW

USER

HFCs // Cleaning of the water pipe has been a challenge for HCFs. At the time of the interviews, they were unaware of the cleaning technique. The initially provided cleaning brushes were not optimal for cleaning the long pipe. As suitable brushes are not available on the market the users have to resort to self-made innovative brushes.

SCORING 

PUBLIC BUILDINGS // In public buildings, the maintenance staff do not know the proper cleaning technique for the water pipe.

SCORING 

SCHOOLS // The schools would be able to maintain the facility if they are trained.

SCORING 

PRODUCER / INSTALLER

The HPMA and staff of Arua Technical Institute Ragem (ATIR) have trained, experienced and competent staff, who are capable of installing and maintaining WASHaLOTs. ATI supervises HPMA during installations and provide hands-on training for HPMA.

SCORING 

REGULATOR / FACILITATOR / INVESTOR

There are gaps in capacities in the local government. They should be involved in the scale up process by the development partners and Ministry. Technical designs for the WASHaLOT should also be widely shared with regulators in Northern Uganda, to facilitate further upscale and modification to suite local context needs.

SCORING 

TECHNOLOGY

USER

HFCs // The HFCs feel that water pressure from WASHaLOT may not be satisfactory for users purely based on user experience. As there is more awareness to avoid spreading of diseases and encountering sick patients, the users do not have a feeling of having washed hands thoroughly due to low water pressure.

SCORING 

PUBLIC BUILDINGS // In public buildings, users feel that the technology is appropriate, but sensitisation and awareness is needed for visitors to use it effectively. There is also a need to provide explanation of how the WASHaLOT works.

SCORING 

SCHOOLS // According to schools, WASHaLOT looks easy to use and seems theft proof. The schools would prefer to receive the WASHaLOT with a base as a complete set.

SCORING 

PRODUCER / INSTALLER

Supply chains for pipes, nozzles are not yet available in the North and must be sourced from Kampala region. Monitoring mechanisms are in place for the operation and maintenance.

SCORING 

REGULATOR / FACILITATOR / INVESTOR

The technology awareness and marketing in the region is still low. Once this is addressed the regulators would be able to pass the tipping point and provide support mechanisms for the technology.

SCORING 

RECOMMENDATIONS

USER

HFCs // The HFCs have difference in users compared to schools. In a school setting the children get to wash hands routinely every day and get used to the handwashing station. The HFCs mostly have one-time users who visit the HCF for one or more days. Hence the WASHaLOT might appear foreign or complicated to use at first. Simple pictorial representation on how to use the WASHaLOT would be of help to the users. Although the water pressure⁷ is a drawback, continuous sensitization on saving water and clarifying myths like high water pressure would make hands cleaner can lead to positive effects. As the cleaning brush is unavailable in the Northern Region, it might be necessary for the producers to provide a cleaning device for HFCs to improvise or create a suitable cleaning device. There is need to train and instruct the maintenance staff on the cleaning procedure during the installation.

The HFCs do not have an assigned budget for handwashing stations and are dependent on external donors/NGOs, especially Water Mission (a faith-based organisation), for installing WASH facilities. Hence, the management must be involved in identifying installation locations for the WASHaLOT to ensure it is used widely and is effective. They also need to consider engagements with Water Mission and other NGOs and donors operating in WASH in HFCs, to appreciate the device and facilitate its upscale in the region.

PUBLIC BUILDINGS // In public buildings, as the device and technology are new in the North and serve not only to routine but one-time users, it is necessary to provide information through pictures on the device and how to use it. The maintenance staff also needs to be educated on cleaning procedures during the installation.

SCHOOLS // In general, schools would appreciate the handwashing stations. Setting up WASHaLOTs in schools which have students from refugee and host communities could benefit from routine handwashing and instilling good behaviour change in their homes. However, it should be noted that rural schools receive lesser funds to operate and maintain the school campus and hence there is a need for extensive sensitization on operation and maintenance to be sensitisation and soft WASH training in intervention schools.

PRODUCER / INSTALLER

More trainings are required to train HPMs in local production and general WASH awareness. This will ensure reduction of cost of WASHaLOT in the North. Although HPMs have been instrumental in installing the WASHaLOT, it is necessary for them to be able to train the maintenance staff during installation.

REGULATOR / FACILITATOR / INVESTOR

As the technology is still new and is being piloted in a different setting, there are efforts needed to set up a strong institutional framework and supportive mechanisms. The WatSSUP programme is aiming to support by developing an upscaling concept and a monitoring system. Although the WASHaLOT is compliant with national standards, it must be tested and proved effective in institutions and public places apart from schools. There is a small gap in the line of responsibilities for scaling-up the technology in the North. There are strong local government offices like DWO and DHO who are responsible at district level for the maintenance of handwashing facilities. The Water and Sanitation Development Facility in the North (WSDf-N) is established as funding mechanism in Northern Uganda and is involved in planning and development of water and sanitation provision. Northern Umbrella for Water and Sanitation is an umbrella organisation providing support to utilities in the North. There needs to be clarity on who is responsible for funding, installing maintaining and monitoring the handwashing facilities in the different settings. As many organisations have introduced many different handwashing technologies in Northern Uganda, it is necessary to select and identify the most appropriate handwashing facilities and scale them up⁸. As the WASHaLOT has proven effective in Kampala, it may be necessary to involve concerned authorities like KCCA in training local government teams in the North. Both WSDf-N and NUWS should be actively involved in pilot installations and should have access to trainings given to HPMAs to get acquainted with the technology.

7 WHO Guidelines on Hand Hygiene in Healthcare [3] includes water quality and temperature as important parameters and does not list water pressure or amount as a factor for safe handwashing. Water is seen as a medium for wetting and rinsing hands. Scrubbing hands with soap enables removing dirt, pathogens and other organics in the hand rather than water pressure. The term 'running water' used in the guideline does not refer to high pressure water but rather a reliable and constant flow of water. The Hygiene Hub in consultation with WHO recommends water pressure sufficient enough to complete a thorough handwash with wetting hands, lather and rinse in 40-60 seconds for health care workers.

8 EAWAG is currently assessing the functionality of different handwashing technologies piloted and used in Uganda

NOTE // The Hygiene Hub in consultation with WHO recommends water pressure that would sufficient for thoroughly lathering, scrubbing and rinsing hands within 40 to 60 seconds.



SETTING 3 // SCHOOLS IN NORTHERN UGANDA – SANITATION FOR MILLIONS (APAC)

Results from schools, Apac // Figure 14

	USER	PRODUCER/ INSTALLER	REGULATOR/ FACILITATOR/ INVESTOR
SOCIAL	(1) +	(2) +	(3) +
ECONOMIC	(4) 0	(5) 0	(6) +
ENVIRONMENTAL	(7) +	(8) +	(9) +
INSTITUTIONAL & LEGAL	(10) +	(11) 0	(12) 0
SKILLS & KNOW HOW	(13) +	(14) +	(15) +
TECHNOLOGY	(16) +	(17) +	(18) +

PRODUCERS / INSTALLERS AND REGULATORS / FACILITATORS / INVESTORS ARE THE SAME FOR APAC AND KAMPALA (SETTING 1).



SOCIAL

USER

As the WASHaLOTS are strategically located (near the toilets for girls and boys) in schools, handwashing behaviour among students has greatly improved. The children enjoy using it and have no barriers. The schools' staff are also happy with the design as it does not allow students to drink from the tap directly which was previously a challenge in the school while using other handwashing facilities.

SCORING 

ECONOMIC

USER

The schools are ready to mobilize funds for more WASHaLOTS and have been in discussion to install low-cost soak away pits. The schools also generally budget for regular supply of soaps.

SCORING 

ENVIRONMENTAL

USER

There is no negative impact seen.

SCORING 

INSTITUTIONAL & LEGAL

USER

The schools have assigned roles and responsibilities for cleaning and operating the handwashing station. Students are mostly responsible for the WASHaLOTS with guidance from the sanitation teacher.

SCORING 

SKILLS & KNOW HOW

USER

The students have been trained to maintain the WASHaLOT and do this under the close supervision of sanitation teachers.

SCORING 

TECHNOLOGY

USER

The technology, although theft proof, could be stolen from schools with no fence. The users feel that the design is good, and they would prefer to receive the WASHaLOT with a base.

SCORING 

RECOMMENDATIONS

USER

The schools in Apac are very appreciative of the technology. The schools, however, have used the technology only for 2 months and more time would be needed to analyse the usage and effectiveness. The schools may also not be aware of the costs to install the WASHaLOT. As the WASHaLOT has a unique design, there is a possibility for the structure to be stolen. Hence it is necessary to pay importance to making the installation theft proof.

5. LIMITATIONS

COVID-19

The TAF process was carried out during the COVID-19 pandemic. Hence, there were a few limitations with respect to the TAF process. Physical distancing measures in place limited group briefings or interviews. All interviews were done individually. Also, the scoring from the interviews were carried out by the TAF team in the absence of the stakeholders. A scoring workshop was not possible as not all stakeholders could gather in the same space. A virtual workshop was not possible as some users from remote locations did not have the facilities i.e. stable internet, laptop, and two-way speakers. COVID-19 also made travel to locations cumbersome with delays and uncertainties. However, one on one calls were conducted with representatives from each of the key stakeholder perspectives for each of the locations and agreed on the final outlook of TAF.

WASHaLOT USAGE

In Kampala, the WASHaLOT were in usage for a few years and the scenarios and challenges there were quite different from those in the North. In the Northern Region, the WASHaLOTs have been introduced only a few weeks or months ago. The users are still not acquainted with the technology. The user groups also differ in the different settings. In general, behaviour in children can be easily moulded compared to adults. This does not mean that children have better hand-washing habits than adults, but children can easily get used to a new handwashing system or group handwashing system due to a daily routine at certain periods in schools as a group activity. Among adults, the handwashing although a routine is not mandatory compared to a school environment and hence can be erratic depending on availability of a hand-washing station with water and soap. All age groups view handwashing as important and a good practice. In Northern Uganda, optimal usage of WASHaLOTs during the pandemic has been limited due to several factors: need for physical distancing measures reducing the number of people washings hands at a given point of time; general reduction in user numbers due to restrictions in movement, reduced activity in public places, reduced number of students in schools (only candidate classes) and; limited opportunity for awareness raising on how to use and operate the technology prior to installation. This means that the WASHaLOTs installed recently as a COVID-19 response measure have not been used to their full potential. Nonetheless, the technology still, allows at least two people to WASH hands at the same time and the water saving potential remains.

LOCAL PRODUCTION

The WASHaLOT although produced locally, is not an economical option yet. The capital investment cost is high compared to other handwashing facilities. This is because the production of some parts has not yet been optimised and the industry is still dependent on importing parts that might be problematic during the pandemic. However, the fact that the technology has proven to be more durable, water saving and able to serve multiple users once installed might be factors to consider when conducting cost-benefit analyses.

LOCATION

The WASHaLOT installations were investigated both in Kampala and the Northern Region. The context, feasibility of installations and operation of WASHaLOTs in Kampala (city) differs from that of suburban/ rural context in the North. For example, installations in Kampala were made by the producers themselves, easily accessible, installed only in schools along with other WASH interventions. The installations in Northern Uganda, were remote and installed as a pandemic response. Yet, the same type of assessment (questionnaires) was made in order to evaluate the installations and compare the results.

COMMUNICATION BETWEEN VARIOUS REGULATORS/INVESTORS

The assessment revealed that the communication between various stakeholder acting as regulators and investors have not been streamlined yet. The MWE and MoES view WASHaLOT as a viable handwashing station and recommend the roll out of WASHaLOTs. Although this critical information has not trickled down to the local government, regulators, and producers. Hence there was a contradiction in information provided by these stakeholders during the interview. NUWS and WSDF-N are keen to further support the upscale of the technology in Northern Uganda, once its proven appropriate for the needs and settings in the North. There is need to engage with them in further ventures with this technology.

6. CONCLUSIONS

The TAF assessment has been done in various regions and settings, with varying periods of usage. Hence one can see a stark difference in the perception of the stakeholder groups. In Kampala where the technology has been used for a few years now (2 years), clear structures and opinions exist. In the North, however, owing to different user groups, settings and modalities around the processes engaged during the installation of the first set of WASHaLOTS as well as uncertainties around the pandemic, a range of open questions exists. Schools as a setting, where group handwashing takes places with the same user groups, provide an easier scenario to mould behaviours in children and create acceptance to a new technology. However, a range of learnings can be drawn from the assessment:

> SENSITISATION AND AWARENESS RAISING FOR ONE-TIME USERS

For the context in Northern Uganda (HCF and public institutions), compared to the setting of schools, it has to be taken in consideration that many users are only one-time users, majority of whom are adults. In such instances, routine handwashing patterns do not exist. As a result, there is need to employ continuous awareness and sensitization approaches about the technology to promote its acceptance and usage. This can be integrated in new or existing behaviour change campaigns targeting surrounding communities to bring about general and sustainable change in handwashing behaviour.

> DESIGN

The WASHaLOT can be designed with fewer nozzles to allow for physical distancing among users and sign boards that cannot be vandalised.

> COST REDUCTION

Although cost effective in the long run, the WASHaLOT has a high initial cost. The national government intends to reduce the price of the handwashing station. This could be either done by providing high subsidies, government certification or trademark of WASHaLOT to maintain standard production and by providing VAT reduction for the WASHaLOTS. Also, it would be necessary to promote the producers of the WASHaLOT once it is recognized throughout the country. Regional production of the WASHaLOT can also reduce the costs.

> FIXED VS. MOBILE LEGS

The standardised fixed base that was piloted in the capital is favoured all over the country. Alternative low-cost models should ensure that they have the features such as infiltration pit to avoid stagnation of water and splashing of water, stable legs, theft-proof design as that of the concrete base model and covers all six sustainability criteria. Hence roll out of mobile WASHaLOT should be considered only as a secondary option.

> ROLES AND RESPONSIBILITIES

At user levels are clearly defined and practiced. However, at national level (investors and regulators) more capacity and clarity are required. The regulator for the capital (KCCA) could be a model. There must be appropriate roles assigned at local level and capacity building in production, installation, operation and maintenance (O&M) must be carried out to scale up and disburse WASHaLOTS in the North. WSDF-N has been an implementing partner on behalf of MWE and NUWs can support the installation of handwashing facilities along with the HPMA. However, both WSDF and NUWs need to be trained. WSDF would be responsible for monitoring and evaluation whereas NUWs in close collaboration with DWO, DHO and HPMA can be involved in installation and maintenance of facilities.

> COVID-19 CONTEXT

When the WASHaLOTS are installed as a COVID-19 response measure, it should be ensured that the SOPs are available and disseminated during the installation stage and not later. Also, sensitization of users is highly recommended to avoid misconceptions like transmission of infectious diseases like COVID-19 by touching water outlet nozzles and assumptions like high pressure water is needed to clean hands thoroughly.

> CERTIFICATION

The WASHaLOT also needs to be standardised according to customer needs and should be certified by the Appropriate Technology Centre (ATC). The MWE and MoES needs to be informed/ involved in this process so that they are able recommend WASHaLOT as a technology that can be scaled up.

> INFILTRATION PITS

The infiltration pits have not been tested for ground water contamination yet. There might be contamination of ground-water only in regions where the groundwater table is high (-2m). In areas where the ground water table is low, the risk of contamination is not significant.

The WASHaLOT is considered effective and easy to use by users from different settings.

The technology has proved sustainable and cost effective.

If the technology is standardised and customised to every setting according to recommendations and user experience from the TAF, the technology could be scaled up in Uganda successfully.

BIBLIOGRAPHY

- 1 Burton, M., Cobb, E., Donachie, P., Judah, G., Curtis, V., Schmidt, W. (2011). The Effect of Handwashing with Water or Soap on Bacterial Contamination of Hands. *International Journal of Environmental Research and Public Health* 2011, 8: 97-104.
→ www.ncbi.nlm.nih.gov/pmc/articles/PMC3037063
- 2 UNICEF and WHO (2020). Hand Hygiene for All, 2
→ www.unicef.org/media/71776/file/Hand-hygiene-for-all-2020.pdf
→ www.unicef.org/guineabissau/press-releases/handwashing-soap-critical-fight-against-coronavirus-out-reach-billions-unicef
- 3 WHO (2009). WHO Guidelines on Hand Hygiene in Health Care, 6
→ www.who.int/publications/i/item/9789241597906
- 4 WHO (2020). Interim recommendations on obligatory hand hygiene against transmission of COVID-19, 1
→ www.who.int/publications/m/item/interim-recommendations-on-obligatory-hand-hygiene-against-transmission-of-covid-19
- 5 → <https://reporting.unhcr.org/node/5129?y=2020#year>
- 6 GIZ (2020). Water Supply and Sanitation for Refugee Settlements and Host Communities (WatSSUP): Initiating measures to ensure water and sanitation in selected refugee settlements and host communities in Northern Uganda, 1
→ www.giz.de/de/downloads/200929_WatSSUP%20Factsheet.pdf
- 7 Ministry of Water and Environment, Uganda (2019). Water and Environment sector response plan for Refugees and Host Communities in Uganda, 68-70
→ <https://data2.unhcr.org/en/documents/details/75623>
- 8 Oxfam (2018). Barrier Analysis Report for the South Sudanese Refugee Response in Imvepi Refugee Settlements in Arua District, 1
- 9 WaterAid (2020). Technical Guide for handwashing facilities in public places and buildings, 2
→ <https://washmatters.wateraid.org/publications/technical-guide-for-handwashing-facilities-in-public-places-and-buildings>
- 10 Siewert, M. (2015). Low-Cost Group WASH Facilities: A scalable Solution for Hygiene Promotion in Primary Schools? (Master Thesis).
→ www.susana.org/en/knowledge-hub/resources-and-publications/library/details/3395

QUESTIONNAIRES // TAF ASSESSMENT FOR SCHOOLS IN UGANDA TECHNOLOGY ALREADY INSTALLED

TIP // Ask the principal, one teacher and two to three children. The average score can be taken for questions that have multiple answers. The teacher and the principal could also be interviewed together.

- > Principals
- > Teachers
- > Children

- > Multiple Industries/
Allied Enterprises
- > Makerere University
Mechanical Workshop

- > Ministry
- > KCCA
- > GIZ Sanitation for Millions and
WATSSUP perspectives

SOCIAL

USER	PRODUCER/INSTALLER	REGULATOR/FACILITATOR/INVESTOR
<p>(1) NEED FOR TECHNOLOGY AND USABILITY</p> <ul style="list-style-type: none"> > Do you feel or see the need of an infrastructure that could accommodate group handwashing activities in your school? > Does the WASHaLOT 3.0 fulfil its purpose as (group) handwashing facility in your school? > Are you satisfied with the WASHaLOT 3.0? > Does the WASHaLOT 3.0 contribute to cleanliness and well-being of its users? <p>To principals and teachers:</p> <ul style="list-style-type: none"> > Do all children in the school accept this handwashing technology with respect to taboos, cultural and religious habits and traditions? What would be possible barriers or conflict areas? <p>PANDEMIC PREPAREDNESS:</p> <ul style="list-style-type: none"> > Do you think that WASHaLOT 3.0 will help prevent spread of COVID-19? > In the event of reopening of schools, will use of handwashing stations as a COVID-19 measure bring behaviour change among pupils? 	<p>(2) NEED FOR PROMOTION AND MARKET RESEARCH</p> <ul style="list-style-type: none"> > Do you expect to reach your customers easily? > Is there/do you expect a demand? > Is the WASHaLOT 3.0 pricing cost effective compared to other conventional handwashing stations? > Which media is the most appropriate for the promotion of WASHaLOT 3.0 according to the producer? (TV, Radio, Newspaper, theatre and drama etc.) <p>PANDEMIC PREPAREDNESS:</p> <ul style="list-style-type: none"> > Would there be difficulties in supply and procurement of parts with regards to COVID-19? > Do you think a pandemic situation like COVID-19 will contribute to increased awareness, promotion and sale of WASHaLOT 3.0? 	<p>(3) NEED FOR BEHAVIOUR CHANGE / SOCIAL MARKETING</p> <ul style="list-style-type: none"> > Do you expect any problems in the perception of the technology and the attitudes towards handwashing-facilities for a scaling-up of this technology? > Are users in the schools involved in choosing technologies, introduction processes and cost models? Who decides what technologies should be deployed? Politicians, technocrats, local government, NGOs or users? <p>PANDEMIC PREPAREDNESS:</p> <ul style="list-style-type: none"> > Are there appropriate mechanisms in place for pandemic preparedness if the technology is scaled up? > Is there any guidance for reopening of schools particularly in health and hygiene context?

ECONOMIC

<p>(4) AFFORDABILITY</p> <p>To principals:</p> <ul style="list-style-type: none"> > Would you be able to afford the cost of the cemented base and infiltration pit installed? <i>Note: rephrase question based on the type of base.</i> > Are there funds to have year round supply of soap? > Can you afford to pay for access to water and cleaning of the WASHaLOT 3.0? > If school population would increase and you would want to have more WASHaLOT 3.0, could the school community afford to buy more? Or where would you get the funds from? 	<p>(5) PROFITABILITY</p> <ul style="list-style-type: none"> > Do you think you generate sufficient revenues from sales? > Do you have resources/capabilities for a) market research, b) promotion, c) product development and d) offering after-sales-services? > Are there additional benefits for the producer in manufacturing the WASHaLOT 3.0? > What is the cost involved producing a single unit of WASHaLOT 3.0? Could you give us an estimate of the market price of a single unit? <i>Note: the interviewee might be reluctant to provide answer. State the purpose as external researchers understand the scaling-up of technology. State that the information is confidential.</i> 	<p>(6) SUPPORTIVE FINANCIAL MECHANISMS</p> <ul style="list-style-type: none"> > Are subsidies or supportive funding available or expected to be available in the short term for the users/buyer? > Are rules and preconditions applied for subsidising the WASHaLOT 3.0? If so, please give details. > Do you have the necessary funds to provide a cemented base for the handwashing structures in the future if there is a demand?
--	--	--

	USER	PRODUCER / INSTALLER	REGULATOR / FACILITATOR / INVESTOR
ENVIRONMENTAL	(7) POTENTIAL (NEGATIVE) IMPACT ON USER ENVIRONMENT OR USER	(8) POTENTIAL IMPACTS FROM LOCAL PRODUCTION OF PRODUCT/ SPARES	(9) POTENTIAL NEGATIVE IMPACT OF SCALING-UP
	<p>To principals and teachers:</p> <ul style="list-style-type: none"> › Is there a risk that negative impacts to the environment could result from the use of the WASHaLOT 3.0? 	<ul style="list-style-type: none"> › Is there a likelihood of negative impacts of the production on the environment (air pollution, high water demand, waste generation)? 	<ul style="list-style-type: none"> › If the technology is scaled up, do you expect negative impacts on the environment and are any agencies actively monitoring possible impacts with a remit to enforce corrective action?
INSTITUTIONAL & LEGAL	(10) LEGAL STRUCTURES FOR MANAGEMENT OF TECHNOLOGY AND ACCOUNTABILITY	(11) LEGAL REGULATION AND REQUIREMENTS FOR REGISTRATION OF PRODUCERS	(12) ALIGNMENT WITH NATIONAL STRATEGIES AND VALIDATION PROCEDURES
	<p>To principals and teachers:</p> <ul style="list-style-type: none"> › Have you managed to establish a clear concept for roles and responsibilities related to the WASHaLOT 3.0? If yes, who is responsible for: <ul style="list-style-type: none"> • Set up/ Installation • Regular refilling with water • Cleaning • Soap supply 	<ul style="list-style-type: none"> › Is the regulation of producers and the quality of your technology transparent, enforced and effective? › Is there a process for government validation of this technology, and is it transparent? 	<ul style="list-style-type: none"> › Is the technology aligned with national standards and strategies, and is it in compliance with national standards? › Are there sufficient capacities in place at national and local level to exercise quality control in production/O&M/ ...?
SKILLS & KNOW HOW	(13) SKILL SET OF USER TO USE TECHNOLOGY (TECHNICALLY AS WELL AS MANAGEMENT IN TERMS OF PAYMENTS)	(14) SKILL SET OF OPERATOR TO MANAGE TECHNOLOGY INCLUDING THE LEVEL OF TECHNICAL AND BUSINESS SKILLS	(15) SECTOR CAPACITY FOR VALIDATION, INTRODUCTION OF TECHNOLOGIES AND FOLLOW-UP
	<p>To principals:</p> <ul style="list-style-type: none"> › Are students, teachers or utility personnel able to manage the WASHaLOT 3.0 and to provide water refilling and cleaning on a regular basis? 	<ul style="list-style-type: none"> › As the producer of this technology do you think you have sufficient technical and business skill to introduce this technology using a cost model that ensures competitive, affordable rates but also profitability? 	<ul style="list-style-type: none"> › Are current capacities and resources sufficient at national and district level to provide adequate technical advice and support for the introduction of this technology? <ul style="list-style-type: none"> • Coordination with producer • Installation • O&M • M&E
TECHNOLOGY	(16) RELIABILITY OF SERVICE, NEEDED EQUIPMENT TO USE THE WASHaLOT 3.0 AND USER SATISFACTION	(17) VIABLE SUPPLY CHAINS FOR TECHNOLOGY, SPARES AND SERVICES	(18) SUPPORT MECHANISMS FOR SCALING-UP THE TECHNOLOGY
	<ul style="list-style-type: none"> › Are you satisfied with the design of the technology and how it works? › Do you think the WASHaLOT 3.0 is theft proof? What can be done to improve protection from theft or vandalism? <i>Note: focus on soap holders, cemented legs etc. specific to Uganda, grey water, soak pit. In case of mobile handwashing station, ask how they protect it. We may never encounter mobile stations.</i> › Do you find the WASHaLOT 3.0 design nice to look at? <i>Note: the question has to be asked cautiously, as the interviewee might perceive the question pertaining to colour, shape or size – try to get an overall view.</i> <p>To principals and teachers:</p> <ul style="list-style-type: none"> › Which one would you prefer to receive / purchase, a WASHaLOT 3.0 plus the standardised legs and a base? Or only WASHaLOT 3.0 and you provide the legs so that you could have freedom to do the legs on how the way you like it? 	<ul style="list-style-type: none"> › Do viable supply chains exist or can those be developed for producing the WASHaLOT 3.0 and spares in your target region? › Do you consider having any mechanism for follow-up with users after technology introduction? (length of service) 	<ul style="list-style-type: none"> › What is the level of supportive structures for this technology, in particular for funding further innovation and development to pass the tipping point?

QUESTIONNAIRES // TAF ASSESSMENT FOR INSTITUTIONS, GOVERNMENT BUILDINGS AND HEALTH CENTRES IN UGANDA

TECHNOLOGY ALREADY INSTALLED

If more than one person is responsible for answering the questions, please consider interviewing them together.

- > Health centre: doctors, nurses, building maintenance, patients
- > Public buildings: officers in charge, building maintenance, heads of the institution, employees
- > Institute: heads of the institute, trainers and students

- > Multiple Industries (Kampala, Apac)
- > Makerere University Mechanical Workshop (Kampala, Apac)
- > HPMA, Arua and Yumbe
- > Arua Technical Institute (ATI) West Nile
- > Any other supplier

- > District Government (Partner of WATSSUP)
 - Water office & health office
- > GIZ Sanitation for Millions and WATSSUP perspectives
- > Northern Umbrella for Water and Sanitation (Utility)

SOCIAL

USER	PRODUCER / INSTALLER	REGULATOR / FACILITATOR / INVESTOR
<p>(1) NEED FOR TECHNOLOGY AND USABILITY</p> <p>To Government office in charge, health centre heads, institution heads, users like students, visitors and patients:</p> <ul style="list-style-type: none"> > Do you feel or see the need of an infrastructure that could accommodate group handwashing (multiple handwashing device) in health centre / institution? > Does the WASHaLOT 3.0 fulfil its purpose as (group) handwashing facility in your institution centre? > Do all users accept this handwashing technology with respect to taboos, cultural and religious habits and traditions? What would be possible barriers or conflict areas? > Are you satisfied with the WASHaLOT 3.0? > Does the WASHaLOT 3.0 contribute to cleanliness and well-being of its users? <p>PANDEMIC PREPAREDNESS:</p> <ul style="list-style-type: none"> > Do you think that WASHaLOT 3.0 will help prevent spread of COVID-19? 	<p>(2) NEED FOR PROMOTION AND MARKET RESEARCH</p> <ul style="list-style-type: none"> > Do you expect to reach your customers easily? > Is there / do you expect a demand? > Is the WASHaLOT 3.0 pricing cost effective compared to other conventional handwashing stations? <p>PANDEMIC PREPAREDNESS:</p> <ul style="list-style-type: none"> > Would there be difficulties in supply and procurement of parts with regards to COVID-19? > Do you think a pandemic situation like COVID-19 will contribute to increased awareness, promotion and sale of WASHaLOT 3.0? 	<p>(3) NEED FOR BEHAVIOUR CHANGE / SOCIAL MARKETING</p> <ul style="list-style-type: none"> > Do you expect any problems in the perception of the technology and the attitudes towards handwashing facilities for a scaling-up of this technology? <p>PANDEMIC PREPAREDNESS:</p> <ul style="list-style-type: none"> > Are there appropriate mechanisms in place for pandemic preparedness if the technology is scaled up? > Is there any guidance for reopening of markets, community toilets, institutions particularly in health and hygiene context?

ECONOMIC

(4) AFFORDABILITY	(5) PROFITABILITY	(6) SUPPORTIVE FINANCIAL MECHANISMS
<p>To Government office in charge, health centre heads, institution heads:</p> <ul style="list-style-type: none"> > Would you be able to afford the cost of the cemented base and infiltration pit installed? <i>Note: interview partner in case of mobile legs.</i> > Are there funds to have year round supply of soap? > Can you afford to pay for access to water and cleaning of the WASHaLOT 3.0? > If the patient influx is high / If the floating population in the institution or office building is high and you would want to have more WASHaLOT 3.0. Could the health centre / institution to buy more? Or where would you get the funds from? 	<ul style="list-style-type: none"> > Do you generate sufficient revenues from sales? > Do you have resources / capabilities for <ol style="list-style-type: none"> market research, promotion, product development and offering after-sales-services? > Are there additional benefits for the producer in manufacturing the WASHaLOT 3.0? > What is the cost of producing a single unit of WASHaLOT 3.0? > What is the market price of a single unit? 	<ul style="list-style-type: none"> > Are subsidies or supportive funding available or expected to be available in the short term for the users / buyer? > Are rules and preconditions applied for subsidising the WASHaLOT 3.0? If so, please give details.

	USER	PRODUCER / INSTALLER	REGULATOR / FACILITATOR / INVESTOR
ENVIRONMENTAL	(7) POTENTIAL (NEGATIVE) IMPACT ON USER ENVIRONMENT OR USER	(8) POTENTIAL IMPACTS FROM LOCAL PRODUCTION OF PRODUCT/ SPARES	(9) POTENTIAL NEGATIVE IMPACT OF SCALING-UP
	<p>To Government office in charge, health centre heads, institution heads:</p> <p>› Is there a risk that negative impacts to the environment could result from the use of the WASHaLOT 3.0?</p>	<p>› Is there a likelihood of negative impacts of the production on the environment (air pollution, high water demand, waste generation)?</p>	<p>› If the technology is scaled up, do you expect negative impacts on the environment and are any agencies actively monitoring possible impacts with a remit to enforce corrective action?</p>
INSTITUTIONAL & LEGAL	(10) LEGAL STRUCTURES FOR MANAGEMENT OF TECHNOLOGY AND ACCOUNTABILITY	(11) LEGAL REGULATION AND REQUIREMENTS FOR REGISTRATION OF PRODUCERS	(12) ALIGNMENT WITH NATIONAL STRATEGIES AND VALIDATION PROCEDURES
	<p>To Government office in charge, health centre heads, institution heads:</p> <p>› Have you managed to establish a clear concept for roles and responsibilities related to the WASHaLOT 3.0? If yes, who is responsible for:</p> <ul style="list-style-type: none"> • Set up/ Installation • Regular refilling with water • Cleaning • Soap supply 	<p>› Is the regulation of producers and the quality of your technology transparent, enforced and effective?</p> <p>› Is there a process for government validation of this technology, and is it transparent?</p>	<p>› Is the technology aligned with national standards and strategies, and is it in compliance with national standards?</p> <p>› Are there sufficient capacities in place at national and local level to exercise quality control in production/O&M/ ...?</p>
SKILLS & KNOW HOW	(13) SKILL SET OF USER TO USE TECHNOLOGY (TECHNICALLY AS WELL AS MANAGEMENT IN TERMS OF PAYMENTS)	(14) SKILL SET OF OPERATOR TO MANAGE TECHNOLOGY INCLUDING THE LEVEL OF TECHNICAL AND BUSINESS SKILLS	(15) SECTOR CAPACITY FOR VALIDATION, INTRODUCTION OF TECHNOLOGIES AND FOLLOW-UP
	<p>To Government office in charge, health centre heads, institution heads:</p> <p>› Is a personnel of you institution able to manage the WASHaLOT 3.0 and to provide water refilling and cleaning on a regular basis?</p> <p>To users only:</p> <p>› Are you satisfied with the maintenance of the handwashing station?</p>	<p>› As the producer of this technology do you think you have sufficient technical and business skill to introduce this technology using a cost model that ensures competitive, affordable rates but also profitability?</p>	<p>› Are current capacities and resources sufficient at national and district level to provide adequate technical advice and support for the introduction of this technology?</p> <ul style="list-style-type: none"> • Coordination with producer • Installation • O&M • M&E
TECHNOLOGY	(16) RELIABILITY OF SERVICE, NEEDED EQUIPMENT TO USE THE WASHaLOT 3.0 AND USER SATISFACTION	(17) VIABLE SUPPLY CHAINS FOR TECHNOLOGY, SPARES AND SERVICES	(18) SUPPORT MECHANISMS FOR SCALING-UP THE TECHNOLOGY
	<p>To Government office in charge, health centre heads, institution heads, users like students, visitors and patients:</p> <p>› Are you satisfied with the design of the technology and how it works?</p> <p>› Do you think the WASHaLOT 3.0 is theft proof? What can be done to improve protection from theft or vandalism?</p> <p>› Do you find the WASHaLOT 3.0 nice to look at?</p> <p>› Which one would you prefer to receive/purchase/ use, a WASHaLOT 3.0 plus the standardised legs and a base? Or only WASHaLOT 3.0 and you provide the legs so that you could have freedom to do the legs on how the way you like it?</p>	<p>› Do viable supply chains exist or can those be developed for producing the WASHaLOT 3.0 and spares in your target region?</p> <p>› Do you consider having any mechanism for follow-up with users after technology introduction? (length of service)</p>	<p>› What is the level of supportive structures for this technology, in particular for funding further innovation and development to pass the tipping point?</p>

QUESTIONNAIRES // TAF ASSESSMENT FOR INSTITUTIONS, GOVERNMENT BUILDINGS AND HEALTH CENTRES IN UGANDA

TECHNOLOGY NOT INSTALLED OR USED YET

If more than one person is responsible for answering the questions, please consider interviewing them together.

- > **Health centre:** doctors, nurses, building maintenance, patients
- > **Public buildings:** officers in charge, building maintenance, heads of the institution, employees
- > **Other institutes:** heads of the institute, trainers and students
- > **Markets:** market chiefs, users
- > **Refugee communities:** community heads, settlement residents including women and children

- > Multiple Industries (Kampala, Apac)
- > Makerere University Mechanical Workshop (Kampala, Apac)
- > HPMA, Arua and Yumbe
- > Arua Technical Institute (ATI) West Nile
- > Any other supplier

- > District Government (Partner of WATSSUP)
 - Water office & health office
- > GIZ Sanitation for Millions and WATSSUP perspectives
- > Northern Umbrella for Water and Sanitation (Utility)



SOCIAL

USER	PRODUCER / INSTALLER	REGULATOR / FACILITATOR / INVESTOR
<p>(1) NEED FOR TECHNOLOGY AND USABILITY</p> <p>To Government office in charge, health centre heads, institution heads, users like students, visitors and patients:</p> <ul style="list-style-type: none"> > Do you feel or see the need of an infrastructure that could accommodate group handwashing (multiple handwashing device) in the health centre/institution/building? > Do you think that the WASHaLOT 3.0 fulfil its purpose as (group) handwashing facility in your institution/centre/area? > Would all users be able accept this handwashing technology with respect to taboos, cultural and religious habits and traditions? What would be possible barriers or conflict areas? > Upon first look and examination, are you satisfied with the WASHaLOT 3.0 structure? > Do you think the WASHaLOT 3.0 would be able contribute to cleanliness and well-being of its users? <p>PANDEMIC PREPAREDNESS:</p> <ul style="list-style-type: none"> > Do you think that WASHaLOT 3.0 will help prevent spread of COVID-19 and be useful during an infectious disease outbreak? 	<p>(2) NEED FOR PROMOTION AND MARKET RESEARCH</p> <ul style="list-style-type: none"> > Do you expect to reach your customers easily? > Is there/ do you expect a demand? > Is the WASHaLOT 3.0 pricing cost effective compared to other conventional handwashing stations? <p>PANDEMIC PREPAREDNESS:</p> <ul style="list-style-type: none"> > Would there be difficulties in supply and procurement of parts with regards to COVID-19? > Do you think a pandemic situation like COVID-19 will contribute to increased awareness, promotion and sale of WASHaLOT 3.0? 	<p>(3) NEED FOR BEHAVIOUR CHANGE / SOCIAL MARKETING</p> <ul style="list-style-type: none"> > Do you expect any problems in the perception of the technology and the attitudes towards handwashing facilities for a scaling-up of this technology? <p>PANDEMIC PREPAREDNESS:</p> <ul style="list-style-type: none"> > Are there appropriate mechanisms in place for pandemic preparedness if the technology is scaled up? > Is there any guidance for reopening of markets, community toilets, institutions particularly in health and hygiene context?

ECONOMIC

<p>(4) AFFORDABILITY</p> <p>To Government office in charge, health centre heads, institution heads:</p> <ul style="list-style-type: none"> > Would you be able to afford the cost of the cemented base and infiltration pit installed? <i>Note: interview partner in case of mobile legs.</i> > Would your institution/ community be able to provide year round supply of soap for the WASHaLOT 3.0 stations? > Could you afford to pay for access to water and cleaning of the WASHaLOT 3.0 if installed? > If the patient influx is high/ If the floating population in the institution or office building is high and you would want to have more WASHaLOT 3.0. Could the health centre/institution to buy more? Or where would you get the funds from? 	<p>(5) PROFITABILITY</p> <ul style="list-style-type: none"> > Do you generate sufficient revenues from sales? > Do you have resources/capabilities for <ul style="list-style-type: none"> a) market research, b) promotion, c) product development and d) offering after-sales-services? > Are there additional benefits for the producer in manufacturing the WASHaLOT 3.0? > What is the cost of producing a single unit of WASHaLOT 3.0? > What is the market price of a single unit? 	<p>(6) SUPPORTIVE FINANCIAL MECHANISMS</p> <ul style="list-style-type: none"> > Are subsidies or supportive funding available or expected to be available in the short term for the users/buyer? > Are rules and preconditions applied for subsidising the WASHaLOT 3.0? If so, please give details.
---	--	---

	USER	PRODUCER / INSTALLER	REGULATOR / FACILITATOR / INVESTOR
ENVIRONMENTAL	<p>(7) POTENTIAL (NEGATIVE) IMPACT ON USER ENVIRONMENT OR USER</p> <p>To Government office in charge, health centre heads, institution heads:</p> <p>› Is there a risk that negative impacts to the environment could result from the use of the WASHaLOT 3.0?</p>	<p>(8) POTENTIAL IMPACTS FROM LOCAL PRODUCTION OF PRODUCT/ SPARES</p> <p>› Is there a likelihood of negative impacts of the production on the environment (air pollution, high water demand, waste generation)?</p>	<p>(9) POTENTIAL NEGATIVE IMPACT OF SCALING-UP</p> <p>› If the technology is scaled up, do you expect negative impacts on the environment and are any agencies actively monitoring possible impacts with a remit to enforce corrective action?</p>
	<p>(10) LEGAL STRUCTURES FOR MANAGEMENT OF TECHNOLOGY AND ACCOUNTABILITY</p> <p>To Government office in charge, health centre heads, institution heads:</p> <p>› In the event of WASHaLOTs being installed, would you have a clear concept for roles and responsibilities related to the WASHaLOT 3.0? If yes, who would be responsible for:</p> <ul style="list-style-type: none"> • Set up/ Installation • Regular refilling with water • Cleaning • Soap supply 	<p>(11) LEGAL REGULATION AND REQUIREMENTS FOR REGISTRATION OF PRODUCERS</p> <p>› Is the regulation of producers and the quality of your technology transparent, enforced and effective?</p> <p>› Is there a process for government validation of this technology, and is it transparent?</p>	<p>(12) ALIGNMENT WITH NATIONAL STRATEGIES AND VALIDATION PROCEDURES</p> <p>› Is the technology aligned with national standards and strategies, and is it in compliance with national standards?</p> <p>› Are there sufficient capacities in place at national and local level to exercise quality control in production/O&M/ ...?</p>
SKILLS & KNOW HOW	<p>(13) SKILL SET OF USER TO USE TECHNOLOGY (TECHNICALLY AS WELL AS MANAGEMENT IN TERMS OF PAYMENTS)</p> <p>To Government office in charge, health centre heads, institution heads:</p> <p>› Will a personnel (maintenance) from your institution/community able to manage the WASHaLOT 3.0 and to provide water refilling and cleaning on a regular basis?</p> <p>To users only:</p> <p>› Would users be dissatisfied with irregular maintenance of the handwashing station?</p>	<p>(14) SKILL SET OF OPERATOR TO MANAGE TECHNOLOGY INCLUDING THE LEVEL OF TECHNICAL AND BUSINESS SKILLS</p> <p>› As the producer of this technology do you think you have sufficient technical and business skill to introduce this technology using a cost model that ensures competitive, affordable rates but also profitability?</p>	<p>(15) SECTOR CAPACITY FOR VALIDATION, INTRODUCTION OF TECHNOLOGIES AND FOLLOW-UP</p> <p>› Are current capacities and resources sufficient at national and district level to provide adequate technical advice and support for the introduction of this technology?</p> <ul style="list-style-type: none"> • Coordination with producer • Installation • O&M • M&E
	<p>(16) RELIABILITY OF SERVICE, NEEDED EQUIPMENT TO USE THE WASHaLOT 3.0 AND USER SATISFACTION</p> <p>To Government office in charge, health centre heads, institution heads, users like students, visitors and patients:</p> <p>› Are you satisfied with the design of the technology and how it works?</p> <p>› Do you think the WASHaLOT 3.0 is theft proof? What can be done to improve protection from theft or vandalism?</p> <p>› Do you find the WASHaLOT 3.0 nice to look at?</p> <p>› Which one would you prefer to receive/purchase/ use, a WASHaLOT 3.0 plus the standardised legs and a base? Or only WASHaLOT 3.0 and you provide the legs so that you could have freedom to do the legs on how the way you like it?</p>	<p>(17) VIABLE SUPPLY CHAINS FOR TECHNOLOGY, SPARES AND SERVICES</p> <p>› Do viable supply chains exist or can those be developed for producing the WASHaLOT 3.0 and spares in your target region?</p> <p>› Do you consider having any mechanism for follow-up with users after technology introduction? (length of service)</p>	<p>(18) SUPPORT MECHANISMS FOR SCALING-UP THE TECHNOLOGY</p> <p>› What is the level of supportive structures for this technology, in particular for funding further innovation and development to pass the tipping point?</p>
TECHNOLOGY			

LIST OF INTERVIEWEES // KAMPALA, APAC AND WEST NILE

SETTING 1 // SCHOOLS IN KAMPALA

GROUP	DESCRIPTION
USER // UP TO 8 SCHOOLS	
St Peters Nsambya Primary School	
Nakivuubo Settlement School	
Mengo Primary School	
Katwe Primary School	
Gaaba Demonstration School	
Kawempe Muslim School	
Ttula Primary School	
Luzira Secondary School > WinS coordinator (assigned teacher) > 2 student council representatives	The head teachers will guide on WinS coordinator and student representatives
PRODUCER/INSTALLER	
1x Manager Allied	Same producer for Kampala as well as Northern Uganda
REGULATOR/FACILITATOR/INVESTOR	
1-2x KCCA	KCCA representatives from Directorate of Public Health and Education
1-2x GIZ Sanitation for Millions	Sanitation for Millions country coordinator and technical advisor



SETTING 2 // HCFs, PUBLIC BUILDINGS AND SCHOOLS IN NORTHERN UGANDA

GROUP	DESCRIPTION
USER	
1-2 x Health Care Facility Obuobo HC II Obuaobo HC III Yoyo HC III Bidi Bidi HC III	(ADHO – Yumbe) (ADHO – Arua)
1-2 x District Office DWO Arua DWO Yumbe DWO Madi-O Chief Adm Office Arua	Acting (Terego)
1-2 x ATI Vocational Training Centre	
1-2 x GIZ office (Rise)	HoP of RIISE program
PRODUCER / INSTALLER	
1-2 x Manager HPMA	Yumbe manager Arua manager
REGULATOR / FACILITATOR / INVESTOR	
1-2 x Government Partner (district officer, umbrella organisation) Umbrella Organization 1 x GIZ WatSSUP	Manager NUWS Advisor



SETTING 3 // SCHOOLS IN NORTHERN UGANDA – SANITATION FOR MILLIONS (APAC)

GROUP	DESCRIPTION
USER // UP TO 2 SCHOOLS	
Apac Primary School	Head Master
Arocha Primary School > WinS coordinator (assigned teacher) > 2 student council representatives	Head Mistress The 2 student council representatives will be proposed by the School Head
PRODUCER / INSTALLER	
1 x Manager Adapt Technical Services	
REGULATOR / FACILITATOR / INVESTOR	
1-2 x Government Partner (district officer, umbrella organization) MoES and WSDf-N	NUWS in Lira-Apac, are not yet familiar with WASHaLOTS, hence proposal to interview WSDf-N
1 x GIZ Sanitation for Millions	Sanitation for Millions technical advisor

RELEVANCE OF THE 18 INDICATORS

(1) NEED FOR THE WASHaLOT 3.0

Target users must express a demand for the services (caters group hygiene activity) provided by the WASHaLOT 3.0 to be able to overcome management challenges in the future.

(2) NEED FOR WASHaLOT 3.0 PROMOTION

Without strong promotion, technologies or products will not be known to users and buyers. Good promotion is essential for scalability.

(3) NEED FOR CHANGE IN PERCEPTION AND SOCIAL MARKETING

There should be a change in perception towards handwashing. More people should wash hands more often. Group handwashing activities increase the number of students washing hands and create the demand for the WASHaLOT 3.0. This requires strong leadership in school and integration/alignment with institutional policies and opens the door for social marketing.

(4) AFFORDABILITY

Users need to be able to afford buying the WASHaLOT 3.0, so that scalability will be possible without external funding or subsidy. Users also need to be able afford payment for the operation and cleaning including repairs, so that their investment in the WASHaLOT 3.0 is sustainable.

(5) PROFITABILITY

Price of the WASHaLOT 3.0 should also include cost for after sales support, development of supply chain and sufficient profit for the producer to be interested to continue production. Sustainability of the WASHaLOT 3.0 may fail if producers cannot raise sufficient revenue to cover these. In cases like these, subsidies from third parties (e.g. NGOs) will be needed.

(6) SUPPORTIVE FINANCIAL MECHANISMS

Supportive funding or subsidies are needed to assist introduction of the WASHaLOT 3.0 but does not guarantee its sustainability or scalability.

(7) POTENTIAL NEGATIVE IMPACTS ON THE ENVIRONMENT AND THE USER

The use of the technology could have negative impacts on the local environment or on the user.

(8) POTENTIAL NEGATIVE IMPACTS IN THE PRODUCTION OF WASHaLOT 3.0

Production of WASHaLOT 3.0 in massive scale may require materials that may be hard to provide on a constant basis and may have an impact to the environment.

(9) POTENTIAL NEGATIVE IMPACT OF SCALING-UP

If a technology is scaled up to use in multiple districts, there could be impacts on the environment and natural resources at a bigger scale.

(10) STRUCTURES FOR MANAGEMENT AND ACCOUNTABILITY OF THE WASHaLOT 3.0

The roles and responsibilities must be clear in order to get the optimal benefits from the WASHaLOT 3.0.

(11) LEGAL REGULATION AND REQUIREMENTS FOR REGISTRATION OF PRODUCER

Legal registration of a company is important before a company could produce or provide service with-in the country. Effective monitoring of the producer's activities by regulatory authorities enhances quality assurance. The roles and responsibilities must be clear in order to get the optimal benefits from the WASHaLOT 3.0.

(12) ALIGNMENT WITH NATIONAL STRATEGIES AND COMPLIANCE TO NATIONAL STANDARDS

Technologies introduced should be aligned with national standards if they are to get support from government institutions. Support from government institutions is important to achieve scalability and sustainability.

(13) SKILL SET OF USER TO MANAGE THE WASHaLOT 3.0

Technologies might need specific skills and understanding to operate and manage it.

(14) LEVEL OF TECHNICAL AND BUSINESS SKILLS

Producers and providers need specific technical and business skills to ensure that they will continue to provide before and after sales services.

(15) SECTOR CAPACITY FOR INTRODUCTION OF WASHaLOT 3.0 AND FOLLOW-UP

The sector must possess sufficient capacities for introduction, information dissemination, monitoring, documentation and to provide technical support.

(16) RELIABILITY OF WASHaLOT 3.0 AND USER SATISFACTION

Products have to fulfil the expectations of users. If expectations are not met, the users may not be willing to use or even pay for it.

(17) VIABLE SUPPLY CHAINS FOR WASHaLOT 3.0 SPARES AND SERVICES

Availability of raw materials locally is essential for the WASHaLOT 3.0 to be scalable and be used on a sustained basis. Local suppliers can also enhance the feedback from users to suppliers.

(18) SUPPORT MECHANISMS FOR WASHaLOT 3.0 DEVELOPMENT

The development and introduction of technologies require a lot of financial resources. Many initiatives don't manage to pass this challenge that's why they fail.



Top left: A student refilling a WASHaLOT in a school in Kampala city // Figure 15
Top right: A person washing hands in a health care facility in the Northern Region // Figure 16
Middle: Children washing hands in a school in the Northern Region // Figure 17
Bottom left: Mobile WASHaLOTs fabricated in the Northern Region // Figure 18
Bottom right: A hand pump mechanic working on fabrication and installation of WASHaLOTs // Figure 19



IMPRINT

Published by:
Deutsche Gesellschaft für Internationale
Zusammenarbeit (GIZ) GmbH
On behalf of the German Federal Ministry
for Economic Cooperation and Development (BMZ)

Registered offices of GIZ
Bonn and Eschborn, Germany

Water Supply and Sanitation for Refugee Settlements
and Host Communities in Northern Uganda (WatSSUP)
Plot 128, Luthuli Avenue, Bugolobi
P.O. Box 10346, Kampala, Uganda

Sector Programme Sustainable Sanitation
Postfach 5180, 65726 Eschborn, Germany
www.giz.de/en // www.fitforschool.international

Authors:
Shobana Srinivasan and Faithful Atusinguza

Reviewers:
Annkathrin Tempel, Anna Kristina Kanathigoda, Franziska Volk,
Fred Nuwagaba, Frederick Madrid, Jan Schlenk, Nana Odoi,
Patrick Mass, Raymond Lukwago, Swaib Semiyaga

Design and Layout:
Christine Lüdke, büro lüdke, Germany

Photo Credits:
Faithful Atusinguza, Swaib Semiyaga,
Eclipse Marketing & Events Africa – Solomon Kyeyune and Irene Alinga

Acknowledgements:
GIZ is grateful to Ministry of Water and Environment, Ministry of Education and Sports, the districts Arua, Madi-Okollo, Terego, Yumbe and Apac, the Northern Umbrella of Water and Sanitation (NU-WS), Kampala Capital City Authority (KCCA) as well as schools and students and health care facilities in supporting the conduction of TAF assessment. We would also like to extend our thanks to the GIZ Global Programme Sanitation for Millions for sharing their time in supporting the TAF on the ground in Uganda.

The GIZ WatSSUP programme implements measures to improve water supply and sanitation services in selected refugee settlements and host communities in Northern Uganda in line with national and international refugee and sector strategies. The GIZ sustainable sanitation programme supports WatSSUP's COVID-19 pandemic response measures, particularly the implementation of the handwashing facilities and the development of better planning orientation for sustainable sanitation.

The TAF was developed within the EU-funded WASH Technologies project WASHtec with SKAT as the leading organisation. To broaden the use of the TAF in development cooperation, GIZ uses the tool's scaling-up potential and adapted the tool accordingly.

The development of the WASHaLOT is one outcome of the collaboration of the GIZ Regional Fit for School Programme (realized in the Philippines, Indonesia, Cambodia and Lao PDR) with the GIZ Sustainable Sanitation Programme. The Sustainable Sanitation Programme supports the global roll-out of the "Fit for School" approach (including innovations such as the WASHaLOT) by offering expertise to bilateral and global programmes predominantly in Africa. GIZ is grateful to Jens Nowag, Axel Schäfer (University of Applied Sciences Potsdam), Hille von Seggern and Sabine Rabe (Studio Urbane Landschaften) and Hergenhahn Product Design as well as Franke Steinert GmbH, Michael Bauer & Rainer Holthues GbR and OXYD GmbH for the fruitful collaboration in developing the WASHaLOT 3.0.

This publication will be made available on the platform of the Sustainable Sanitation Alliance (SuSanA):
www.susana.org/en/knowledge-hub/resources-and-publications/library/details/4019

For more Information please contact:
Nana Odoi, nana.odoi@giz.de or
Arne Panesar, arne.panesar@giz.de

Disclaimer:
The publication is distributed free of charge and commercial reproduction is prohibited. GIZ encourages the distribution in schools, health centres and public buildings; photocopying of the report and part of it for personal and educational purposes is allowed with recognition of the source. Requests for reprint and other inquiries should be directed to the Sustainable Sanitation Programme.

June 2021

This publication is licensed under Creative Commons:
Attribution – NonCommercial – NoDerivatives 4.0 International

