

Handwashing Facilities Annex

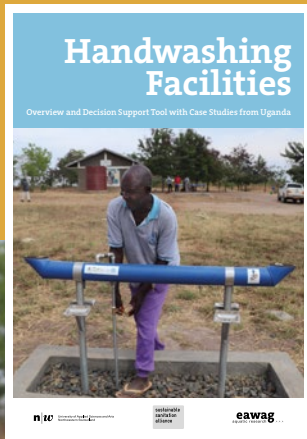




Photo source: WaterSHED

Introduction

This is the annex to the publication “Handwashing facilities – Overview and decision support tool with case studies from Uganda”. It is a living document, that brings together a set of examples that have been in use in various countries. The documented information shall help implementers to make an informed decision on handwashing facilities they want to implement in their respective settings.

SHARE YOUR KNOWLEDGE:

Please provide additional input to this document either for the already featured examples or provide us with new examples. Please use the prepared forms for additional examples on page 50 to 51 in the main publication, or send additional information on examples featured in this annex to info@susana.org.

We want to acknowledge the feedback already received from colleagues at the respective organisations. A number of examples are still under review and the information will be updated regularly.

The various handwashing facilities presented in this Annex are grouped according to type and each system is briefly described. The description addresses the following key aspects:

Scale and intended use

Type of installation

Water supply

Greywater management and drainage

User interface

Technical specifications

Further the handwashing systems are ranked (“+” partially well, “++” rather well) in a list of decision criteria. The ranking is based on published information or information shared by users.

The main steps of the decision support tool (described in “Handwashing facilities – Overview and decision support tool with case studies from Uganda”) are:

1. Characterizing contexts and developing scenarios using the list of decision criteria
2. Screening (to narrow down considerable options)
3. Identifying the systems available and the best matches
4. Prioritizing the options
5. Exploring scaling-up potential by analysing the supply chain and potential management system

We hope that the decisions support tool in the main document as well as this collection of examples will help practitioners in decision making for futures implementation of handwashing facilities around the globe.



This annex is part of the publication “Handwashing Facilities”. It explains the decision process of finding the best suitable handwashing facility for your scenario. For more information please go to the website of the Sustainable Sanitation Alliance (SuSanA): <https://bit.ly/3s1IuQ0>

> You have developed your own handwashing facility?
Fill out the two templates about your handwashing facility (pages 68 and 69) and sent it to: info@susana.org

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1.

Handwashing facilities
connected to a piped water network
or storage tank



The permanent handwashing facility is constructed out of durable locally available and affordable materials. It has a multi user contactless push tap system to allow up to 200 daily handwashing events and on a larger scale up to 1000 events. It is suitable for health centres, markets and religious sites.

The station is connected to piped water main and in areas of low reliability an elevated reservoir tank may be included. The systems also include a dispenser of liquid soap and mirrors. The sinks are positioned at the size of 70 centimeter allowing use by children and wheelchair users. Greywater is disposed of through a sewer network or a soil infiltration system. The MoCH has a 'talking wall' to support awareness especially on hand hygiene and other contextual information

The distance between sinks allows physical distancing. Its appeal and standout attractiveness makes it nudge users to handwashing routines.

The system was designed for health care facilities and other public places to meet WHO infection prevention control guidelines and COVID-19 response.

Proper management is needed to ensure sustained operation. It has higher cost than alternatives with less level of service. Skills of construction workers will influence the quality of the final facility.

If materials and tools are locally available, on-site assembly works rather well. The maintenance can be conducted by local craft workers.

- > Individual and group handwashing facility
- > Sanitation for Millions Uganda
- > Developed by Sanitation for Millions Uganda and Kampala City Authority (KCCA)

Photo sources: Sanitation 4 Millions.
Top: MoCH by Nsambya police station, Kampala, Uganda;
left: Health worker demonstrates handwashing steps at MoCH Station in Kammala, Uganda.

GIZ Sanitation for Millions Millions of Clean Hands (MoCH) Station

Connected to a piped water network or water tank

Permanent facility with multiple taps/outlets



KEY ASPECTS		OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day		
		2 – 50 people, up to 200 events per day	+	
		50 – 500 people, up to 1000 events per day	++	
	Intended use	Serving entire public space or entire institution		
Serving specific area of a public space or an institution		++		
Serving one household				
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	++	
		Storage tank refilled through piped water supply, tanker truck, rainwater	++	
		Storage tank refilled manually		
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	+	
		Direct connection to sewer network	++	
		Wastewater storage container with subsequent disposal		
USER INTERFACE	Number of taps/outlets per unit	1		
		2 – 4	+	
		5 – 10		
		> 11		
		Type of tap/outlet	Taps requiring hand contact for operation	
		Reduced hand contamination		
		Contactless tap/outlet	++	
	Number of users washing hands at the same time	1		
		2 – 4	+	
		5 – 10		
		> 11		
	Accessibility	Children	++	
People with disabilities		++		
Availability and type of soap dispenser	Soap dispenser	++		
	Tray			
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Standard: 500 – 1000 ml	+	
		Water-saving: 250 – 500 ml	++	
		Water-saving: 30 – 50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location	On-site production	++	
		On-site assembly	++	
		Prefabricated: produced locally		
		Prefabricated: produced centrally		
	Installation	Time	> 3 days	++
			1 – 3 day	
< 1 day				
Skills		Advanced		
		Basic	++	
		Costs	High costs	++
O&M	Time	Low costs		
		Daily	+	
		Weekly	+	
	Skills	> Weekly		
		Advanced		
		Basic		
Costs	High costs			
	Low costs	+		
	Durability and expected timespan	5 – 10 years	+	
Risk of vandalism and theft	2 – 5 years			
	1 – 2 years			
	< 1 year			
	High risk			
	Low risk	+		
ADDITIONAL SPECIFICATIONS				

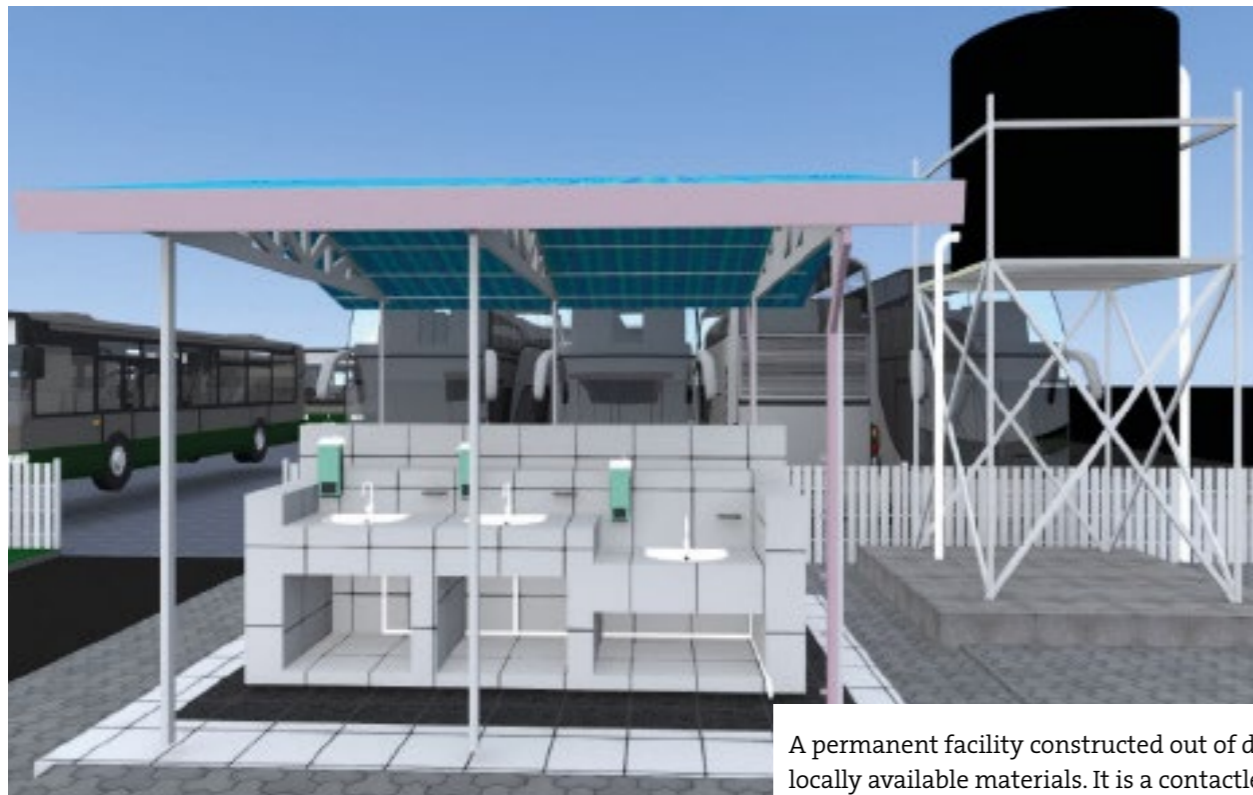


Photo source: WaterAid

WaterAid > Handwashing facility for bus stops

Connected to a piped water network or storage tank

Permanent facility with one tap per sink



A permanent facility constructed out of durable locally available materials. It is a contactless tap/outlet system that depending on the size can handle up to 200 handwashing events per day or on a larger scale up to 1000 events per day.

The water tank is installed on an elevation to provide sufficient pressure in the taps and is fed from a water network or rainwater harvesting system.

The facilities are fitted with liquid soap dispensers and a sensor tap, using electricity to ensure a hands-free mechanism and lever-arm taps for those facilities where users do not have electric power. Basins are paved with tiles for easy cleaning, and greywater is drained to protected soak-pits. Taps are fixed at different levels to ensure access by children and people with disabilities.

The stand design has a floor plan with taps one meter apart to allow for physical distancing. Yet 6 people can wash their hands at once, which saves time queueing.

The system is suitable for bus stops and schools or other public institutions/settings for group and individual handwashing.

Proper management is needed to prevent damage to facilities. It has a long installation time and relatively high cost. Skills of construction workers will influence the quality of the final facility.

> Individual and group handwashing facility
> WaterAid Rwanda
> Developed by WaterAid
<https://bit.ly/3LxxCRO>

	KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day *	1 – 10 people, up to 20 events per day		
		2 – 50 people, up to 200 events per day		
		50 – 500 people, up to 1000 events per day		
Intended use		Serving entire public space or entire institution	+	
		Serving specific area of a public space or an institution	+	
		Serving one household		
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	+	
		Storage tank refilled through piped water supply, tanker truck, rainwater	+	
		Storage tank refilled manually	+	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration		
		Direct connection to sewer network	+	
		Wastewater storage container with subsequent disposal		
USER INTERFACE	Number of taps/outlets per unit	1		
		2 – 4		
		5 – 10	+	
		> 11		
	Type of tap/outlet		Taps requiring hand contact for operation	++
			Reduced hand contamination	
			Contactless tap/outlet	
	Number of users washing hands at the same time		1	
			2 – 4	
			5 – 10	++
			> 11	
Accessibility		Children	++	
		People with disabilities	+	
Availability and type of soap dispenser		Soap dispenser	++	
		Tray		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing *	Standard: 500 – 1000 ml		
		Water-saving: 250 – 500 ml		
		Water-saving: 30 – 50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location *		On-site production	
			On-site assembly	
			Prefabricated: produced locally	
			Prefabricated: produced centrally	
	Installation	Time *	> 3 days	
			1 – 3 day	
			< 1 day	
		Skills	Advanced	++
Basic				
	Costs	High costs	++	
		Low costs		
O&M	Time *	Daily		
		Weekly		
		> Weekly		
	Skills *	Advanced		
		Basic		
	Costs *	High costs		
		Low costs		
Durability and expected timespan *		5 – 10 years		
		2 – 5 years		
		1 – 2 years		
		< 1 year		
Risk of vandalism and theft		High risk	+	
		Low risk		
ADDITIONAL SPECIFICATIONS				

WaterAid Handwashing facility for bus stops

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org

WaterAid > Ceramic basin handwashing facility

Connected to a piped water network or storage tank

Permanent facility with one tap per sink

The conventional handwashing system is a permanent and durable single-tapped ceramic basin mounted on a wall. It allows 1 person at a time to wash their hands. Depending on the number of installed sinks up to a 1000 handwashing events per day are possible.

The taps are fed by an existing or extended piped water supply. Also, a central storage tank can be used with rainwater harvesting. Usually the taps are hand operated, but sometimes other taps (elbow or foot operated) are used. Wastewater can be safely disposed of as the basins are connected to the local wastewater system.

Physical distancing is not a problem as it is set up for one person to be used at a time. Further multiple systems can be installed with an appropriate distance.

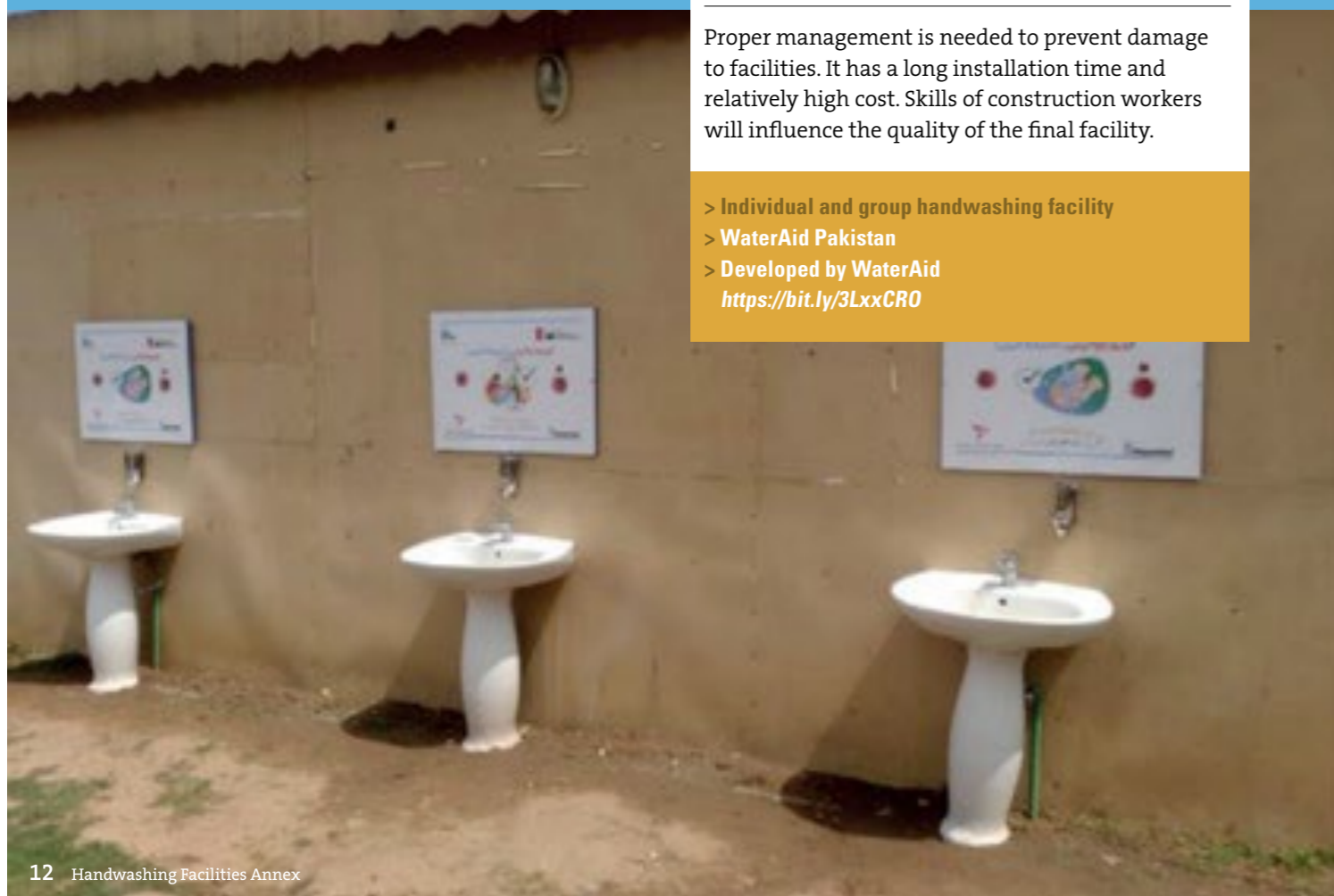
The system is suitable for community centers, health care facilities, quarantine centers, schools, government offices, religious centers, and public places.

It is easy in operation, but the installation and maintenance cost are relatively high. Materials are locally available and affordable. For outside conditions indoor materials might not be suitable.

Proper management is needed to prevent damage to facilities. It has a long installation time and relatively high cost. Skills of construction workers will influence the quality of the final facility.

- > Individual and group handwashing facility
- > WaterAid Pakistan
- > Developed by WaterAid
<https://bit.ly/3LxxCRO>

Photo source: WaterAid



		KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day		1–10 people, up to 20 events per day	+	
			2–50 people, up to 200 events per day	++	
			50–500 people, up to 1000 events per day	+	
		Intended use	Serving entire public space or entire institution	+	
			Serving specific area of a public space or an institution	++	
			Serving one household		
WATER SUPPLY	Type of water supply system and water source used		Piped water supply	++	
			Storage tank refilled through piped water supply, tanker truck, rainwater		
			Storage tank refilled manually		
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system		Direct soil infiltration		
			Direct connection to sewer network	++	
			Wastewater storage container with subsequent disposal		
USER INTERFACE	Number of taps/outlets per unit		1	++	
			2–4		
			5–10		
			>11		
			Type of tap/outlet	Taps requiring hand contact for operation	++
			Reduced hand contamination		
			Contactless tap/outlet		
		Number of users washing hands at the same time		1	++
				2–4	
				5–10	
				>11	
		Accessibility		Children	
			People with disabilities		
	Availability and type of soap dispenser		Soap dispenser	+	
			Tray		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing		Standard: 500–1000 ml	++	
			Water-saving: 250–500 ml		
			Water-saving: 30–50 ml		
			Water-recycling: 5 ml		
	Production: type of materials and location		On-site production	++	
			On-site assembly		
			Prefabricated: produced locally	++	
			Prefabricated: produced centrally		
			Prefabricated: imported		
	Installation	Time		> 3 days	++
				1–3 day	
				< 1 day	
	Skills		Advanced	++	
			Basic		
	Costs		High costs	++	
			Low costs		
O&M	Time		Daily		
			Weekly		
			> Weekly	+	
	Skills *		Advanced		
			Basic		
	Costs		High costs	+	
			Low costs		
Durability and expected timespan			5–10 years		
			2–5 years	+	
			1–2 years		
			< 1 year		
Risk of vandalism and theft			High risk	++	
			Low risk		
ADDITIONAL SPECIFICATIONS					

WaterAid Ceramic basin handwashing facility

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org



Photo source:
Mekbib Tadesse/
Splash Social
Enterprises

Splash Social Enterprises > Splash handwashing station

Connected to a piped water network or storage tank

Permanent or semi-mobile facility with two taps per sink

This permanent handwashing station is manufactured out of durable materials and can be installed using locally available, affordable materials. Depending on the event size and usage, each station with 2 taps can serve 600 handwashing events per day or on a larger scale up to 1200 events per day.

The facility can be easily attached to local walls where a piped water supply is possible. Two hand operated stainless-steel taps are feeding a common shallow basin discouraging drinking non-potable water. The basin is connected to available wastewater system or greywater channel.

The idea of the shape design is to promote the interaction of two children washing simultaneously their hands and prevent them from looking at a wall. The height can be adapted for elder students by adding a cost-efficient pedestal option. Built-in soap trays are integrated.

Pandemic adjustment could include blocking off one tap so that students/users can maintain physical distance while washing hands. Although the taps are hand operated the surface contact area is small.

The station was specifically designed for children. It can be placed in public schools or public places.

The installation of the devices can occur in target countries by local plumbers at a low cost and using locally available plumbing materials. The plastic stations are durable and UV-resistant. Installation is fast and relatively simple compared to other permanent station options. The stations are easy to maintain and care for over time.

> Individual and group handwashing facility
> Developed by Splash Social Enterprises
<https://splash.org/social-enterprises>



		KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day		1 – 10 people, up to 20 events per day	+	
			2 – 50 people, up to 200 events per day	++	
			50 – 500 people, up to 1000 events per day	+	
	Intended use		Serving entire public space or entire institution		
			Serving specific area of a public space or an institution	++	
			Serving one household		
WATER SUPPLY	Type of water supply system and water source used		Piped water supply	++	
			Storage tank refilled through piped water supply, tanker truck, rainwater	+	
			Storage tank refilled manually		
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system		Direct soil infiltration		
			Direct connection to sewer network	++	
			Wastewater storage container with subsequent disposal	+	
USER INTERFACE	Number of taps/outlets per unit		1		
			2 – 4	++	
			5 – 10		
			> 11		
	Type of tap/outlet		Taps requiring hand contact for operation	++	
			Reduced hand contamination		
			Contactless tap/outlet		
	Number of users washing hands at the same time		1		
			2 – 4	++	
		5 – 10			
		> 11			
Accessibility		Children	++		
		People with disabilities			
Availability and type of soap dispenser		Soap dispenser			
		Tray	++		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing		Standard: 500 – 1000 ml	+	
			Water-saving: 250 – 500 ml	+	
			Water-saving: 30 – 50 ml		
			Water-recycling: 5 ml		
	Production: type of materials and location		On-site production		
			On-site assembly	++	
			Prefabricated: produced locally		
			Prefabricated: produced centrally	++	
	Installation	Time		> 3 days	
				1 – 3 day	
			< 1 day	++	
Skills			Advanced		
			Basic		
Costs			High costs		
			Low costs	+	
O&M		Time		Daily	
				Weekly	
				> Weekly	+
Skills		Advanced			
		Basic	+		
Costs		High costs			
		Low costs	+		
Durability and expected timespan		5 – 10 years			
		2 – 5 years	+		
		1 – 2 years			
		< 1 year			
Risk of vandalism and theft		High risk			
		Low risk	+		
ADDITIONAL SPECIFICATIONS					

Unicef > Hands-on Nepal 01 (draft)

Connected to a piped water network or storage tank

Permanent or semi-mobile facility with two or four taps

EMERGENCY: ✓



The taps and sinks are designed in 2 or 4 tap options. It can serve from 2 to 50 people up to 50 to 500 people a day allowing up to a 1000 handwashing events per day.

The system can be connected to a piped water supply or an external storage tank. The availability of water then relies on manual refills.

The elbow operated tap allows contact-free operation if used correctly. Soap dispensers are included. For drainage it requires the connection to a wastewater or greywater management system or soil infiltration.

Pandemic response.*

The system was designed for use in health care facilities.

The systems can be produced locally out of the metal frame and fiber sinks. The frames and sinks can be prefabricated – making installation at the spot very easy and fast and keep the cost low.

- > Individual and group handwashing facility
- > Unicef Nepal
- > Developed by Unicef
- www.unicef.org/nepal/stories/hands-innovation



Photo sources: Unicef

KEY ASPECTS		OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1–10 people, up to 20 events per day		
		2–50 people, up to 200 events per day	+	
		50–500 people, up to 1000 events per day	++	
	Intended use	Serving entire public space or entire institution	++	
Serving specific area of a public space or an institution		++		
Serving one household				
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	++	
		Storage tank refilled through piped water supply, tanker truck, rainwater	+	
		Storage tank refilled manually		
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	+	
		Direct connection to sewer network	++	
		Wastewater storage container with subsequent disposal		
USER INTERFACE	Number of taps/outlets per unit	1	++	
		2–4		
		5–10		
		>11		
		Type of tap/outlet	Taps requiring hand contact for operation	
		Reduced hand contamination		
		Contactless tap/outlet	++	
	Number of users washing hands at the same time	1		
		2–4	++	
		5–10		
		>11		
	Accessibility *	Children		
People with disabilities				
Availability and type of soap dispenser	Soap dispenser	+		
	Tray			
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Standard: 500–1000 ml	+	
		Water-saving: 250–500 ml		
		Water-saving: 30–50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location	On-site production		
		On-site assembly	+	
		Prefabricated: produced locally	++	
		Prefabricated: produced centrally		
		Prefabricated: imported		
	Installation	Time	> 3 days	
			1–3 day	+
			< 1 day	
	Skills *	Advanced		
		Basic		
	Costs	High costs		
		Low costs	+	
O&M	Time	Daily		
		Weekly		
		> Weekly	+	
	Skills *	Advanced		
		Basic		
	Costs	High costs		
		Low costs	+	
Durability and expected timespan	5–10 years			
	2–5 years			
	1–2 years	+		
	< 1 year			
Risk of vandalism and theft	High risk			
	Low risk	+		
ADDITIONAL SPECIFICATIONS				

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org



Photo source: Unicef

Unicef > Hands-on Nepal 02 (draft)

Connected to a piped water network or storage tank

Permanent or semi-mobile facility with two or four taps

EMERGENCY: ✓

This variation of Hands-on Nepal is a system where prefabricated fiberglass sinks are positioned around the main water tank. It can serve from 2 to 50 people up to 50 to 500 people a day allowing up to a 1000 handwashing events per day.

The tank is meant for external water storage capacity and can be filled from piped network or water tank.

Wastewater management requires the construction of soil infiltration or water tank. The setup may include a soap tray or soap dispenser.

The position of sinks around the tank allows physical distancing.

The system is designed for healthcare facilities.

The system can be locally constructed, and the pre-assembled structure is easy to install. The costs are relatively low.

- > Individual and group handwashing facility
 - > Unicef Nepal
 - > Developed by Unicef
- www.unicef.org/nepal/stories/hands-innovation

KEY ASPECTS		OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day		
		2 – 50 people, up to 200 events per day	+	
		50 – 500 people, up to 1000 events per day	++	
Intended use	Serving entire public space or entire institution			
	Serving specific area of a public space or an institution	+		
	Serving one household			
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	++	
		Storage tank refilled through piped water supply, tanker truck, rainwater	+	
		Storage tank refilled manually		
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	+	
		Direct connection to sewer network		
		Wastewater storage container with subsequent disposal	+	
USER INTERFACE	Number of taps/outlets per unit	1		
		2 – 4	++	
		5 – 10		
		> 11		
		Type of tap/outlet	Taps requiring hand contact for operation	+
	Number of users washing hands at the same time	Reduced hand contamination		
		Contactless tap/outlet		
		1		
		2 – 4	+	
		5 – 10		
Accessibility *	Children			
	People with disabilities			
Availability and type of soap dispenser	Soap dispenser			
	Tray	+		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Standard: 500 – 1000 ml	++	
		Water-saving: 250 – 500 ml		
		Water-saving: 30 – 50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location	On-site production		
		On-site assembly		
		Prefabricated: produced locally	++	
		Prefabricated: produced centrally		
	Installation	Time *	> 3 days	
			1 – 3 day	
< 1 day				
Skills *		Advanced		
		Basic		
		Costs	High costs	
O&M *	Time	Low costs	++	
		Daily		
		Weekly		
Skills	> Weekly			
	Advanced			
	Basic			
Costs	High costs			
	Low costs			
	Durability and expected timespan *	5 – 10 years		
Risk of vandalism and theft *	2 – 5 years			
	1 – 2 years			
	< 1 year			
	High risk			
ADDITIONAL SPECIFICATIONS		Low risk		

Unicef Hands-on Nepal 02

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org

PolyJohn > PS14-1000 portable handwashing sink (draft)

Connected to a piped water network or water tank

Mobile facility with four taps/outlets



The US designed system is produced by rotational modelling. Integrated into the system are water and wastewater tanks (75 liter). It works rather well for up to 200 handwashing events per day.

The station is designed for outdoor use and connects to a piped water supply system as well as to a functional wastewater/greywater system.

The water outlets are contactless taps that are operated per foot pump. The station includes a soap container.

Pandemic response.*

The stations are applicable in public spaces and for community use.

The retail costs in the US are about 850 US-Dollar. Local production is possible in countries with a rotational moulding industry. For local production high investments are required. The prefabricated systems are light when empty and easy to install.

> Individual and group handwashing facility
> PolyJohn
www.polyjohn.com/4-person-wash-station

Photo source: Poly John

		KEY ASPECTS	OPTIONS	RANKING
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day		1–10 people, up to 20 events per day	
			2–50 people, up to 200 events per day	++
			50–500 people, up to 1000 events per day	
Intended use		Serving entire public space or entire institution		
		Serving specific area of a public space or an institution	++	
		Serving one household		
WATER SUPPLY	Type of water supply system and water source used		Piped water supply	++
			Storage tank refilled through piped water supply, tanker truck, rainwater	
			Storage tank refilled manually	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system		Direct soil infiltration	
			Direct connection to sewer network	
			Wastewater storage container with subsequent disposal	++
USER INTERFACE	Number of taps/outlets per unit		1	
			2–4	++
			5–10	
			>11	
	Type of tap/outlet		Taps requiring hand contact for operation	
			Reduced hand contamination	
			Contactless tap/outlet	++
	Number of users washing hands at the same time		1	
			2–4	++
			5–10	
			>11	
Accessibility *		Children		
		People with disabilities		
Availability and type of soap dispenser		Soap dispenser	+	
		Tray		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing		Standard: 500–1000 ml	
			Water-saving: 250–500 ml	++
			Water-saving: 30–50 ml	
			Water-recycling: 5 ml	
	Production: type of materials and location		On-site production	
		On-site assembly		
		Prefabricated: produced locally		
		Prefabricated: produced centrally		
		Prefabricated: imported	++	
Installation	Time		> 3 days	
			1–3 day	
			< 1 day	+
	Skills *		Advanced	
			Basic	
Costs		High costs	++	
		Low costs		
O&M	Time		Daily	
			Weekly	
			> Weekly	+
	Skills *		Advanced	
			Basic	
Costs		High costs	+	
		Low costs		
Durability and expected timespan		5–10 years		
		2–5 years	+	
		1–2 years		
		< 1 year		
Risk of vandalism and theft		High risk	+	
		Low risk		
ADDITIONAL SPECIFICATIONS				

PolyJohn PS14-1000 portable handwashing sink

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org

2.

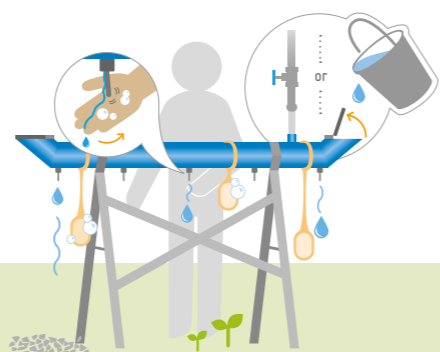
Handwashing facilities
connected to a piped water network
or storage tank, or with manual refilling

GIZ Fit for School > WASHaLOT 3.0

Connected to a piped water network or storage tank, or with manual refilling

Permanent or semi-mobile facility with multiple taps/outlets

EMERGENCY: ✓



The GIZ WASHaLOT 3.0 is a multiple tap handwashing system, serving between 10 people (= small version) up to 20 people (= large version) at the same time. The larger prefabricated product consists of a 150 centimeter HDPE-pipe with adjustable height and a capacity of 28 liter, allowing around 150 washing activities through stainless-steel outlets.

The pipe can be easily refilled manually if not connected to a piped water supply. Availability of water may rely on the effort of manual refilling if not connected with a permanent water supply.

The water outlets are working individually. For the sake to save water, water is running only when touching the specific tap. The construction can include soap dispensers. Soap nets can be attached to the pipe.

Pandemic adjustments should include blocking off some of the taps so that students/users can maintain physical distance while washing hands. Although the taps are hand-operated the surface contact area is small.

The system is suitable for schools, camps and other public institutions/settings for group and individual handwashing.

It is easy in operation & maintenance due to wide openings on both sides and the bottom of the pipe. The costs are comparably low.

> Individual and group handwashing facility
> Developed by GIZ Fit for School
<https://bit.ly/317ruwR>



Photo source: GIZ

KEY ASPECTS		OPTIONS	RANKING
1	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day	
		2 – 50 people, up to 200 events per day	++
		50 – 500 people, up to 1000 events per day	++
	Intended use	Serving entire public space or entire institution	++
Serving specific area of a public space or an institution		+	
Serving one household			
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	++
		Storage tank refilled through piped water supply, tanker truck, rainwater	++
		Storage tank refilled manually	++
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	++
		Direct connection to sewer network	+
		Wastewater storage container with subsequent disposal	+
USER INTERFACE	Number of taps/outlets per unit	1	
		2 – 4	
		5 – 10	++
		> 11	
	Type of tap/outlet	Taps requiring hand contact for operation	++
		Reduced hand contamination	+
		Contactless tap/outlet	
	Number of users washing hands at the same time	1	
		2 – 4	+
5 – 10		+	
> 11		++	
Accessibility	Children	++	
	People with disabilities		
Availability and type of soap dispenser	Soap dispenser		
	Tray	++	
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Standard: 500 – 1000 ml	
		Water-saving: 250 – 500 ml	
		Water-saving: 30 – 50 ml	++
		Water-recycling: 5 ml	
	Production: type of materials and location	On-site production	
On-site assembly		++	
Prefabricated: produced locally		+	
Prefabricated: produced centrally		++	
	Prefabricated: imported	+	
Installation	Time	> 3 days	
		1 – 3 day	+
		< 1 day	
	Skills	Advanced	
		Basic	
Costs	High costs		
	Low costs	++	
O&M	Time	Daily	
		Weekly	+
		> Weekly	
Skills	Advanced		
	Basic	++	
Costs	High costs		
	Low costs	++	
Durability and expected timespan	5 – 10 years		
	2 – 5 years	+	
	1 – 2 years		
	< 1 year		
Risk of vandalism and theft	High risk		
	Low risk	+	
ADDITIONAL SPECIFICATIONS			

GIZ Fit for School WASHaLOT 3.0

Oxfam

> Foot-operated handwashing facility in camps

Connected to a piped water network or storage tank, or with manual refilling

Permanent or semi-mobile facility with multiple taps/outlets

EMERGENCY: ✓



Photo source: Moury Rahman/Oxfam

The locally made handwashing system is a robust structure designed for outdoor use. It can be used for up to 20 or up to 200 handwashing events per day.

It has an integrated water storage capacity. The water can be supplied by a connection to a piped network, or the tank can be refilled manually by a tanker truck.

The system uses a foot pedal to operate the water tap and includes a contactless soap container. Due to the foot pedal it cannot be operated by people with reduced mobility. For drainage it can be connected to a wastewater/greywater management system or it can be managed through soil infiltration.

It is suitable for refugee camps.

No hand contact handwashing.

The systems are heavy and not flexible as they are welded out of metal. It can be produced locally. The costs are relatively high and if not connected to a piped water supply a daily refill is necessary.

- > Individual handwashing facility
 - > Oxfam Bangladesh / UNCHR
 - > Developed by Oxfam Bangladesh
- <http://bit.ly/43rvzHN>



Photo source: Fabeha Monir/Oxfam

KEY ASPECTS		OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day	+	
		2 – 50 people, up to 200 events per day	++	
		50 – 500 people, up to 1000 events per day		
	Intended use	Serving entire public space or entire institution	+	
Serving specific area of a public space or an institution		++		
Serving one household				
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	+	
		Storage tank refilled through piped water supply, tanker truck, rainwater	++	
		Storage tank refilled manually	+	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	++	
		Direct connection to sewer network	+	
		Wastewater storage container with subsequent disposal	+	
USER INTERFACE	Number of taps/outlets per unit	1	++	
		2 – 4		
		5 – 10		
		> 11		
		Type of tap/outlet	Taps requiring hand contact for operation	
		Reduced hand contamination	++	
		Contactless tap/outlet		
	Number of users washing hands at the same time	1	++	
		2 – 4		
		5 – 10		
		> 11		
	Accessibility	Children		
People with disabilities		++		
Availability and type of soap dispenser	Soap dispenser	+		
	Tray	+		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Standard: 500 – 1000 ml	+	
		Water-saving: 250 – 500 ml	+	
		Water-saving: 30 – 50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location	On-site production		
		On-site assembly	++	
		Prefabricated: produced locally		
		Prefabricated: produced centrally		
	Installation	Time	> 3 days	
			1 – 3 day	
< 1 day			+	
Skills		Advanced		
		Basic		
		Costs	High costs	
	Low costs	++		
O&M	Time	Daily	+	
		Weekly		
		> Weekly		
	Skills	Advanced		
		Basic		
	Costs	High costs	+	
Low costs		+		
Durability and expected timespan	5 – 10 years			
	2 – 5 years	+		
	1 – 2 years			
	< 1 year			
Risk of vandalism and theft	High risk			
	Low risk	+		
ADDITIONAL SPECIFICATIONS				

Oxfam Foot-operated handwashing facility in camps

WaterAid > Foot-operated handwashing facility for 4 users

Connected to a piped water network or storage tank, or with manual refilling

Permanent or semi-mobile facility with multiple taps/outlets with one tap per sink



This handwashing station can be used by 4 people at a time.

It includes a 200 liter water tank which can be refilled manually or connected to a permanent pipe system. The system also can be used with rainwater harvesting.

Each of the 4 taps are above an individual stainless steel sink. All sinks are connected to a pipe for drainage into a greywater system. If no wastewater system is available a soak pit is recommended. A metal sheet is included as a soap tray.

The washing bench has a length of 4.9 meter which allows 1 meter of physical distance. Pandemic adjustments could include contactless operated taps to lower the risk of infectious disease spreading.

The system is suitable for various locations such as community centers, health care facilities, quarantine centers, schools, government offices, religious centers and public places.

The design is simple and fabrication easy. It is a semi-permanent construction. Disassembling and transferring is easy.

> Individual and group handwashing facility
> WaterAid Pakistan
> Developed by WaterAid
<https://bit.ly/3LxxCRO>

2. Handwashing facility - foot-operated for 2 or more users

Summary
This station includes examples from Pakistan, Liberia and Bangladesh.

General description
A water tank with pipe connects to multiple basins/sinks.

Target locations
Community centers, health care facilities, quarantine centers, schools, government offices, religious centers and public places.

WaterAid Pakistan

Description
This facility includes two main steel frames, one is the stand for the water tank, and the other consists of stainless steel sinks for multiple users, which rest on a metal sheet with soap and soap dispenser. These frames are welded together. Pipes are then connected from the water tank to the taps and the 200 liter water tank can then be filled either manually or connected to the main water supply.

A drainage pipe is connected to all sinks to properly drain and the drainage is strongly recommended. At these handwashing facilities were installed very early in the response to COVID-19, normal taps were used, therefore this is not a hands-free facility.

General design feature
The metal frames for sinks and the water tank are fabricated from square pipe (2x2x2mm). The pipe stand is 4.9 meters long and 600mm wide, which allows for a one meter physical distance.

The metal sheet of thickness 16 standard size gauge (SWG) is provided and cut to adjust to the width of the metal frame and the metal sheet. The frame is then welded and supported with legs bringing it to 1.1x 1.2 1/2 meters in height.

Advantages

- Can be easily disassembled and moved to another place.
- Simple design and can be easily fabricated.

Disadvantages

- Needs periodic O&M.
- Requires hand-free.
- This was installed as an emergency solution.

Technical Guide for handwashing facilities in public places and buildings / 23

	KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day *	1 – 10 people, up to 20 events per day		
		2 – 50 people, up to 200 events per day		
		50 – 500 people, up to 1000 events per day		
	Intended use	Serving entire public space or entire institution	+	
		Serving specific area of a public space or an institution	+	
		Serving one household		
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	+	
		Storage tank refilled through piped water supply, tanker truck, rainwater	+	
		Storage tank refilled manually	+	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration		
		Direct connection to sewer network	+	
		Wastewater storage container with subsequent disposal		
USER INTERFACE	Number of taps/outlets per unit	1		
		2 – 4	++	
		5 – 10		
		> 11		
		Type of tap/outlet	Taps requiring hand contact for operation	+
		Reduced hand contamination		
	Contactless tap/outlet			
Number of users washing hands at the same time	1			
	2 – 4	++		
	5 – 10			
	> 11			
Accessibility *	Children			
	People with disabilities			
Availability and type of soap dispenser	Soap dispenser			
	Tray	++		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing *	Standard: 500 – 1000 ml		
		Water-saving: 250 – 500 ml		
		Water-saving: 30 – 50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location	On-site production		
		On-site assembly	++	
		Prefabricated: produced locally	++	
		Prefabricated: produced centrally		
	Installation *	Time	> 3 days	
			1 – 3 day	
< 1 day				
Skills		Advanced		
		Basic		
		Costs	High costs	
	Low costs			
O&M *	Time	Daily		
		Weekly		
		> Weekly		
	Skills	Advanced		
	Basic			
Costs	High costs			
	Low costs			
Durability and expected timespan *	5 – 10 years			
	2 – 5 years			
	1 – 2 years			
	< 1 year			
Risk of vandalism and theft *	High risk			
	Low risk			
ADDITIONAL SPECIFICATIONS				

WaterAid Foot-operated handwashing facility for 4 users

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org



This mobile handwashing station entails a single (or double) container-tap system with a 50 to 500 liter tank. The station works rather well for 2 to 50 users per day. It is accessible to people with disabilities and children when the height of the basin is adjusted.

The tank is refilled manually or may be connected to rainwater harvesting. If a water source is not available nearby, lifting of water will be required and can be tedious for the management committee. For wastewater collection a tank is included which need regular disposing.

The 1 to 2 taps are foot operated with a pedal. By pressing the pedal, the tap opens, and water is running. Liquid soap can also be connected to a foot-pedal. Alternatively, bar soap is available. It also includes an option for tissues to dry hands and a bin for disposal.

The hands-free construction is designed to limit cross-contamination.

The system is designed for health care facilities.

The installation costs are relatively low. If materials and tools are locally available, on-site assembly works rather well. The maintenance can be conducted by local craft workers.

- > Individual handwashing facility
- > WaterAid Malawi
- > Developed by WaterAid
<https://bit.ly/3LxxCRO>



Photo source: WaterAid

WaterAid > Foot-operated handwashing facility for 1 to 2 users

Connected to a storage tank, or with manual refilling

Mobile facility with integrated greywater tank

EMERGENCY: ✓

KEY ASPECTS		OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day		
		2 – 50 people, up to 200 events per day	++	
		50 – 500 people, up to 1000 events per day		
Intended use	Serving entire public space or entire institution			
	Serving specific area of a public space or an institution	++		
	Serving one household			
WATER SUPPLY	Type of water supply system and water source used	Piped water supply		
		Storage tank refilled through piped water supply, tanker truck, rainwater	+	
		Storage tank refilled manually	++	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration		
		Direct connection to sewer network		
		Wastewater storage container with subsequent disposal	++	
USER INTERFACE	Number of taps/outlets per unit	1	++	
		2 – 4		
		5 – 10		
		> 11		
		Type of tap/outlet	Taps requiring hand contact for operation	
	Number of users washing hands at the same time	Reduced hand contamination		
		Contactless tap/outlet	++	
		1	++	
		2 – 4		
		5 – 10		
	Accessibility *	Children		
		People with disabilities		
Availability and type of soap dispenser	Soap dispenser	++		
	Tray			
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing *	Standard: 500 – 1000 ml		
		Water-saving: 250 – 500 ml		
		Water-saving: 30 – 50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location	On-site production		
		On-site assembly	++	
		Prefabricated: produced locally		
		Prefabricated: produced centrally		
	Installation	Time *	> 3 days	
			1 – 3 day	
< 1 day				
Skills		Advanced	++	
		Basic		
		Costs	High costs	
O&M *	Time	Low costs	++	
		Daily		
		Weekly		
Skills	> Weekly			
	Advanced			
	Basic			
Costs	High costs			
	Low costs			
	Durability and expected timespan *	5 – 10 years		
2 – 5 years				
1 – 2 years				
< 1 year				
Risk of vandalism and theft *	High risk			
	Low risk			
ADDITIONAL SPECIFICATIONS				

WaterAid Foot-operated handwashing facility for 1 to 2 users

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org

WaterAid > Handwashing facility for people with disabilities



This mobile, welded square-tube construction is designed for people with physical disabilities (children and adults). It always constitutes an 80 liter water tank and a height-adjustable foot or knee operated handwashing device. A ramp can be placed to allow easy access to those in wheelchairs or on crutches. It is designed for individual handwashing.

The supply tank is easily refilled manually or can be connected to a rainwater harvesting system. It includes two 20 liter waste buckets for separate disposal of wastewater and used tissues.

The hands-free system includes water, liquid soap, sanitiser, and tissues for drying hands.

The mobility of the construction allows application in various places. It can be used in community centers, health care facilities, quarantine centers, schools, government offices, religious centers and public places.

The maintenance of the simple construction is easy.

The installation costs are relatively low. If materials and tools are locally available, on-site assembly works rather well. The maintenance can be conducted by local craft workers.

- > Individual handwashing facility
- > WaterAid Zambia
- > Developed by WaterAid <https://bit.ly/3LxxCRO>



Photo source: WaterAid

Connected to a storage tank, or with manual refilling

Mobile facility with integrated greywater tank

EMERGENCY: ✓



KEY ASPECTS		OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day	++	
		2 – 50 people, up to 200 events per day		
		50 – 500 people, up to 1000 events per day		
Intended use	Serving entire public space or entire institution			
	Serving specific area of a public space or an institution	++		
	Serving one household			
WATER SUPPLY	Type of water supply system and water source used	Piped water supply		
		Storage tank refilled through piped water supply, tanker truck, rainwater	+	
		Storage tank refilled manually	++	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration		
		Direct connection to sewer network		
		Wastewater storage container with subsequent disposal	++	
USER INTERFACE	Number of taps/outlets per unit	1	++	
		2 – 4		
		5 – 10		
		> 11		
		Type of tap/outlet	Taps requiring hand contact for operation	
Number of users washing hands at the same time	Type of tap/outlet	Reduced hand contamination		
		Contactless tap/outlet	++	
		1	++	
		2 – 4		
		5 – 10		
Accessibility	Number of users washing hands at the same time	> 11		
		Children		
Availability and type of soap dispenser	Accessibility	People with disabilities	++	
		Soap dispenser	++	
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing *	Tray		
		Standard: 500 – 1000 ml		
		Water-saving: 250 – 500 ml		
		Water-saving: 30 – 50 ml		
	Production: type of materials and location	Water use efficiency: water used per handwashing *	Water-recycling: 5 ml	
			On-site production	
			On-site assembly	++
			Prefabricated: produced locally	
	Installation	Production: type of materials and location	Prefabricated: produced centrally	
			Prefabricated: imported	
Time *			> 3 days	
1 – 3 day				
Skills	Installation	< 1 day		
		Advanced	++	
		Basic		
Costs	Skills	High costs		
		Low costs	++	
O&M *	Costs	Daily		
		Weekly		
		> Weekly		
		Advanced		
Durability and expected timespan *	O&M *	Basic		
		High costs		
Risk of vandalism and theft *	Durability and expected timespan *	Low costs		
		5 – 10 years		
		2 – 5 years		
		1 – 2 years		
ADDITIONAL SPECIFICATIONS	Risk of vandalism and theft *	< 1 year		
		High risk		
		Low risk		

WaterAid Handwashing facility for children with disabilities

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org

3.

Handwashing facilities
with manual refilling

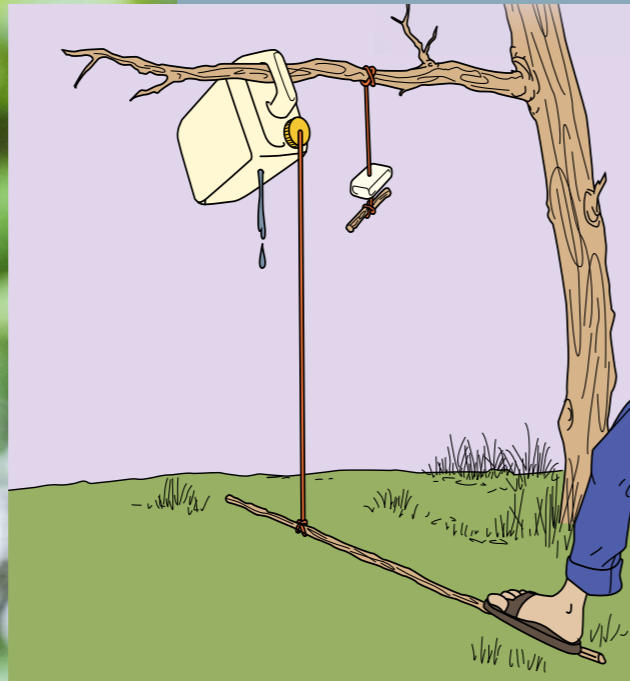


Photo sources: left: GIZ; right: CDC U.S. Department of Health and Human Services

A tippy tap is a container (often a jerry can) with a small hole, which hangs on a stand. It works by tapping a lever to tip the water out from a container. It is best suitable for up to 200 handwashing events per day.

The container of the tippy tap is refilled manually. The frequency of refilling depends on the size of the container and the number of users.

During the handwashing the feet might get wet as the greywater is infiltrated directly into the soil or a soak away pit can be constructed under the tippy tap.

Pandemic response*

The system is suitable for schools or households.

The system requires space and cannot be moved easily. But it is a very simple and low-cost system, which can be constructed very fast from locally available materials. There are many training materials available.

- > Individual and group handwashing facility
- > UNICEF Ghana: Video 'How to build a tippy tap' www.youtube.com/watch?v=bW32lc9G1Sc
- > World Vision USA: Video 'DIY: How to Make a Tippy Tap for Hand Washing' www.youtube.com/watch?v=_yESEzKWz-w

> Tippy Tap (draft)

Container with manual refilling

Permanent or semi-mobile facility without drainage or with soil infiltration

EMERGENCY: ✓

Tippy Tap

KEY ASPECTS		OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day	+	
		2 – 50 people, up to 200 events per day	++	
		50 – 500 people, up to 1000 events per day	+	
	Intended use	Serving entire public space or entire institution	+	
		Serving specific area of a public space or an institution	+	
		Serving one household	+	
WATER SUPPLY	Type of water supply system and water source used	Piped water supply		
		Storage tank refilled through piped water supply, tanker truck, rainwater		
		Storage tank refilled manually	++	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	++	
		Direct connection to sewer network		
		Wastewater storage container with subsequent disposal		
USER INTERFACE	Number of taps/outlets per unit	1	+	
		2 – 4		
		5 – 10		
		> 11		
		Type of tap/outlet	Taps requiring hand contact for operation	
		Reduced hand contamination		
		Contactless tap/outlet	+	
	Number of users washing hands at the same time	1	+	
		2 – 4		
		5 – 10		
> 11				
Accessibility	Children	++		
	People with disabilities			
Availability and type of soap dispenser	Soap dispenser	+		
	Tray			
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing *	Standard: 500 – 1000 ml		
		Water-saving: 250 – 500 ml		
		Water-saving: 30 – 50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location	On-site production		
		On-site assembly	++	
		Prefabricated: produced locally		
		Prefabricated: produced centrally		
			Prefabricated: imported	
	Installation	Time	> 3 days	
1 – 3 day			+	
< 1 day				
Skills		Advanced		
		Basic	+	
		Costs	High costs	
	Low costs			
O&M	Time *	Daily		
		Weekly		
		> Weekly		
	Skills	Advanced		
		Basic	++	
	Costs	High costs		
	Low costs	+		
Durability and expected timespan	5 – 10 years			
	2 – 5 years			
	1 – 2 years	+		
	< 1 year			
Risk of vandalism and theft	High risk	+		
	Low risk			
ADDITIONAL SPECIFICATIONS				

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org



Photo sources: Oxfam

The Oxfam Handwashing Station (OHS) is a 4 tap handwashing system, but serves 2 people handwashing at one time. 2 of the taps (one on each side) are for liquid soap or soapy water. Once filled, the station can provide 200 handwashes from one fill.

For water supply the system needs to be refilled manually. Drainage occurs through a tube connected to the basin, and waste water can be collected in a bucket, or, more recommended, into a soak away pit.

The water saving taps, allow handwashing with as little as 30 to 100 milliliter of water per time. Further the system includes a liquid soap container.

The position of the taps allows 2 people to handwash at safe distance at same time. Taps use antimicrobial brass to reduce contamination.

Rapidly deployable – assembles in less than 10 minutes.

The system is designed for emergency WASH contexts, such as refugee camps, but have also been used to date in health centres, schools and market places.

The system is designed to be shipped in the same dimensions as a pack of 10 latrine slabs, therefore reducing shipping costs.

Cost is 60 GBP per unit, with additional costs for concrete, soak away materials and soap.

> Communal handwashing facility
 > Developed by Oxfam, Spark Creative and Dunster House
www.oxfamwash.org/handwashing

Oxfam > OHS – the future of handwashing in emergencies

Handwashing Station
 with manual refilling

Permanent or
 semi-mobile facility
 with integrated
 wastewater collection tank
 or through soil infiltration

EMERGENCY: ✓



KEY ASPECTS		OPTIONS	RANKING
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day	
		2 – 50 people, up to 200 events per day	++
		50 – 500 people, up to 1000 events per day	+
	Intended use	Serving entire public space or entire institution	++
		Serving specific area of a public space or an institution	++
		Serving one household	++
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	
		Storage tank refilled through piped water supply, tanker truck, rainwater	
		Storage tank refilled manually	++
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	+
		Direct connection to sewer network	
		Wastewater storage container with subsequent disposal	++
USER INTERFACE	Number of taps/outlets per unit	1	
		2 – 4	++
		5 – 10	
		> 11	
		Type of tap/outlet	Taps requiring hand contact for operation
		Reduced hand contamination	+
		Contactless tap/outlet	
	Number of users washing hands at the same time	1	
		2 – 4	++
		5 – 10	
> 11			
Accessibility	Children	++	
	People with disabilities	++	
Availability and type of soap dispenser	Soap dispenser	++	
	Tray		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Standard: 500 – 1000 ml	
		Water-saving: 250 – 500 ml	
		Water-saving: 30 – 50 ml	++
		Water-recycling: 5 ml	
	Production: type of materials and location	On-site production	
		On-site assembly	++
		Prefabricated: produced locally	
		Prefabricated: produced centrally	
		Prefabricated: imported	++
	Installation	Time	> 3 days
1 – 3 day			
< 1 day			+
Skills		Advanced	
		Basic	++
		Costs	High costs
	Low costs	++	
O&M	Time	Daily	+
		Weekly	+
		> Weekly	
	Skills	Advanced	
		Basic	++
	Costs	High costs	
Low costs		++	
Durability and expected timespan	5 – 10 years	++	
	2 – 5 years		
	1 – 2 years		
	< 1 year		
Risk of vandalism and theft	High risk		
	Low risk	+	
ADDITIONAL SPECIFICATIONS	Mirrors to encourage handwashing, space for stickers for adding key information		+
			+

Oxfam OHS – the future of handwashing in emergencies

SNV > Kanyaga Kanyaga 'Step on it, Step on it' (draft)

Container with manual refilling

Permanent or semi-mobile facility with multiple taps/outlets or with one tap per sink design

EMERGENCY: ✓



Photos source: SNV

The handwashing system was designed in Tanzania by SNV in cooperation with refugees. 1 to 4 taps can be installed.

The system has an integrated water storage. The water tank capacity is flexible from 25 to 250 liter. The water availability depends on the handwashing events per day and relies on the effort of manual refilling.

The wastewater/greywater is collected in a bucket below the basins. It requires disposal into available wastewater collection systems or soil infiltration. The handwashing station includes a foot operated tap and soap dispenser.

Pandemic response.*

The intended use is communal, in institutions or offices.

The station is designed locally and robust.

> Individual and group handwashing facility

> Developed by SNV
<https://bit.ly/3tmnnZF>



	KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1–10 people, up to 20 events per day	++	
		2–50 people, up to 200 events per day	+	
		50–500 people, up to 1000 events per day		
	Intended use	Serving entire public space or entire institution		
Serving specific area of a public space or an institution		+		
Serving one household				
WATER SUPPLY	Type of water supply system and water source used	Piped water supply		
		Storage tank refilled through piped water supply, tanker truck, rainwater	+	
		Storage tank refilled manually	+	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration		
		Direct connection to sewer network		
		Wastewater storage container with subsequent disposal	+	
USER INTERFACE	Number of taps/outlets per unit	1	+	
		2–4	+	
		5–10		
		>11		
		Type of tap/outlet	Taps requiring hand contact for operation	
		Reduced hand contamination		
		Contactless tap/outlet	++	
	Number of users washing hands at the same time	1	+	
		2–4	+	
		5–10		
		>11		
	Accessibility *	Children		
People with disabilities				
Availability and type of soap dispenser	Soap dispenser	+		
	Tray			
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing *	Standard: 500–1000 ml		
		Water-saving: 250–500 ml		
		Water-saving: 30–50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location	On-site production		
		On-site assembly		
		Prefabricated: produced locally	++	
		Prefabricated: produced centrally		
		Prefabricated: imported		
	Installation *	Time	> 3 days	
			1–3 day	
			< 1 day	
	Skills	Advanced		
		Basic		
	Costs	High costs		
		Low costs		
O&M *	Time	Daily		
		Weekly		
		> Weekly		
	Skills	Advanced		
		Basic		
	Costs	High costs		
	Low costs			
Durability and expected timespan *	5–10 years			
	2–5 years			
	1–2 years			
	< 1 year			
Risk of vandalism and theft *	High risk			
	Low risk			
ADDITIONAL SPECIFICATIONS				

SNV Kanyaga Kanyaga

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org

ARUP > Jengu Handwashing Unit

Container with manual refilling

Mobile facility with integrated wastewater collection tank with no touch water supply, soap and mirror

EMERGENCY: ✓

Photo sources: ARUP



The Jengu handwashing unit is designed for individual users.

Water is supplied from a Jerry can located on the ground so easy to refill. Water is controlled with the integrated rubber foot pump to the spout. A no-touch solution reduces contamination.

A waste water drain and hose is included. Unit comes with guidance on making a soak away or water can be collected in a container.

Jengu has been used for pandemic response in a variety of situations.

The design is suitable for refugee camps.

Unit available in different height options including sizes for adults, children and infants. There is a unit available for people of reduced mobility.

- > Individual handwashing facility
- > Developed between Arup, The British Red Cross and the London School of Hygiene and Tropical Medicine <https://jengu.org.uk>
- > Further information: www.arup.com/jengu-handwashing-units

	KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1–10 people, up to 20 events per day	++	
		2–50 people, up to 200 events per day	++	
		50–500 people, up to 1000 events per day	++	
	Intended use	Serving entire public space or entire institution	++	
Serving specific area of a public space or an institution		++		
Serving one household		++		
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	++	
		Storage tank refilled through piped water supply, tanker truck, rainwater	++	
		Storage tank refilled manually	++	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	++	
		Direct connection to sewer network	++	
		Wastewater storage container with subsequent disposal	++	
USER INTERFACE	Number of taps/outlets per unit	1	++	
		2–4		
		5–10		
		>11		
	Type of tap/outlet	Taps requiring hand contact for operation		
		Reduced hand contamination		
		Contactless tap/outlet	++	
	Number of users washing hands at the same time	1	++	
		2–4		
		5–10		
		>11		
Accessibility	Children	++		
	People with disabilities	++		
Availability and type of soap dispenser	Soap dispenser	++		
	Tray	++		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Standard: 500–1000 ml		
		Water-saving: 250–500 ml	++	
		Water-saving: 30–50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location	On-site production		
		On-site assembly	++	
		Prefabricated: produced locally	++	
		Prefabricated: produced centrally	+	
		Prefabricated: imported	++	
	Installation	Time	> 3 days	
			1–3 day	
			< 1 day	+
Skills		Advanced		
		Basic	++	
Costs	High costs			
	Low costs	+		
O&M	Time	Daily	+	
		Weekly		
		> Weekly		
	Skills	Advanced		
Basic		++		
Costs	High costs	+		
	Low costs			
Durability and expected timespan	5–10 years			
	2–5 years			
	1–2 years			
	< 1 year	++		
Risk of vandalism and theft	High risk			
	Low risk	++		
ADDITIONAL SPECIFICATIONS	Ground anchor, side to side security cables		++	

GIZ 'Clean Mali' > Zero-K Belebeba (draft)

Container with manual refilling

Mobile facility with one tap per sink with wastewater collection tank or soil infiltration

EMERGENCY: ✓



The mobile handwashing station is a metal frame construction with tap above a sink and a tray to place a container for water. It has a robust structure which is suitable for outdoor use.

The water availability depends on manual refills and the size of the used container.

The device is operated using food pedals. One activates the soap dispenser and the other the water outlet. Wastewater can be drained into an existing wastewater management system, direct soil infiltration or a connected wastewater tank. The wastewater tank needs regular manual disposal.

For pandemic adjustments the single units can stand in an appropriate distance. Due to the foot pedals the risk of contamination is reduced as no hand contact is required.

The system is suitable for communities, schools or other institutions.

The handwashing stations are portable and can be produced locally. The cost is relatively low and maintenance is simple.

> Individual and group handwashing station
> Developed by a handyman from Bamako



Photos source: GIZ

		KEY ASPECTS	OPTIONS	RANKING
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day		1 – 10 people, up to 20 events per day	
			2 – 50 people, up to 200 events per day	++
			50 – 500 people, up to 1000 events per day	+
		Intended use	Serving entire public space or entire institution	+
		Serving specific area of a public space or an institution	++	
		Serving one household		
WATER SUPPLY	Type of water supply system and water source used		Piped water supply	
			Storage tank refilled through piped water supply, tanker truck, rainwater	+
			Storage tank refilled manually	++
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system		Direct soil infiltration	+
			Direct connection to sewer network	+
			Wastewater storage container with subsequent disposal	++
USER INTERFACE	Number of taps/outlets per unit		1	++
			2 – 4	
			5 – 10	
			> 11	
			Type of tap/outlet	Taps requiring hand contact for operation
			Reduced hand contamination	
			Contactless tap/outlet	++
	Number of users washing hands at the same time		1	++
			2 – 4	
			5 – 10	
			> 11	
	Accessibility		Children	+
		People with disabilities		
Availability and type of soap dispenser		Soap dispenser	++	
		Tray		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing *		Standard: 500 – 1000 ml	
			Water-saving: 250 – 500 ml	
			Water-saving: 30 – 50 ml	
			Water-recycling: 5 ml	
	Production: type of materials and location		On-site production	
			On-site assembly	+
			Prefabricated: produced locally	++
			Prefabricated: produced centrally	
			Prefabricated: imported	
	Installation	Time		> 3 days
			1 – 3 day	+
			< 1 day	
Skills			Advanced	+
			Basic	
			Costs	High costs
		Low costs	+	
O&M	Time		Daily	++
			Weekly	
			> Weekly	
	Skills		Advanced	
			Basic	+
		Costs	High costs	
		Low costs	+	
Durability and expected timespan		5 – 10 years		
		2 – 5 years	++	
		1 – 2 years		
		< 1 year		
Risk of vandalism and theft		High risk	+	
		Low risk		
ADDITIONAL SPECIFICATIONS				

GIZ 'Clean Mali' Zero-K Belebeba

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org



The handwashing station LAVESE can serve 1 person at a time.

LAVESE works independently from gravity: Before washing, the hand pump must be operated with a couple of pumps to create pressure in the freshwater tank. The water tap can then regularly be switched on and off. In addition, it is possible to fix a shower tube to the tap.

The wastewater tank functions as a sink and collects the used water. This way, the danger of standing water is avoided and potentially contaminated water can be disposed at an appropriate spot. Both tanks are made of long-lasting, HDPE-certified and recyclable plastic. They are fastened to each other with buckles and can be detached to ease emptying and refilling. When all valves are closed, the handwashing device is leakproof.

There are many options to set up the handwashing device: Placing it on a table or a tripod, hanging it on the rung of a ladder, strapping it to a tree and carrying it over the shoulder. It comes with two dispensers (soap and disinfection), but can be refilled with any other liquid product.

The handwashing module is designed to primarily serve emergency teams in situations where water for personal hygiene is otherwise not conveniently accessible. It can be used to equip vehicles or support project teams at mobile clinics or food distributions, but it is also used by households and people in conflict areas or after natural disasters when the regular supply is dysfunctional.

- > Individual handwashing facility
- > Developed by Lavese. Made in Germany www.lavese.de



Photos source: Lavese

Lavese > Lavese basic 'clean after action'

Container with manual refilling

Mobile facility with integrated wastewater collection tank

EMERGENCY: ✓

		KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day		1 – 10 people, up to 20 events per day	++	
			2 – 50 people, up to 200 events per day	+	
			50 – 500 people, up to 1000 events per day		
	Intended use		Serving entire public space or entire institution		
			Serving specific area of a public space or an institution	++	
			Serving one household	++	
WATER SUPPLY	Type of water supply system and water source used		Piped water supply		
			Storage tank refilled through piped water supply, tanker truck, rainwater		
			Storage tank refilled manually	++	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system		Direct soil infiltration		
			Direct connection to sewer network		
			Wastewater storage container with subsequent disposal	++	
USER INTERFACE	Number of taps/outlets per unit		1	++	
			2 – 4		
			5 – 10		
			> 11		
	Type of tap/outlet		Taps requiring hand contact for operation	++	
			Reduced hand contamination	+	
			Contactless tap/outlet		
	Number of users washing hands at the same time		1	++	
			2 – 4		
			5 – 10		
			> 11		
Accessibility		Children	+		
		People with disabilities	+		
Availability and type of soap dispenser		Soap dispenser	++		
		Tray			
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing		Standard: 500 – 1000 ml		
			Water-saving: 250 – 500 ml	++	
			Water-saving: 30 – 50 ml		
			Water-recycling: 5 ml		
	Production: type of materials and location		On-site production		
			On-site assembly	+	
			Prefabricated: produced locally		
			Prefabricated: produced centrally	+	
		Prefabricated: imported	++		
	Installation	Time		> 3 days	
				1 – 3 day	
				< 1 day	++
Skills			Advanced		
			Basic	+	
			High costs	++	
Costs		Low costs			
O&M	Time		Daily	++	
			Weekly	+	
			> Weekly		
	Skills		Advanced	+	
			Basic	+	
	Costs		High costs	+	
		Low costs	+		
Durability and expected timespan		5 – 10 years	+		
		2 – 5 years	++		
		1 – 2 years			
		< 1 year			
Risk of vandalism and theft		High risk	+		
		Low risk	+		
ADDITIONAL SPECIFICATIONS		Extendable with shower tube	++		

Lavese Lavese basic 'clean after action'

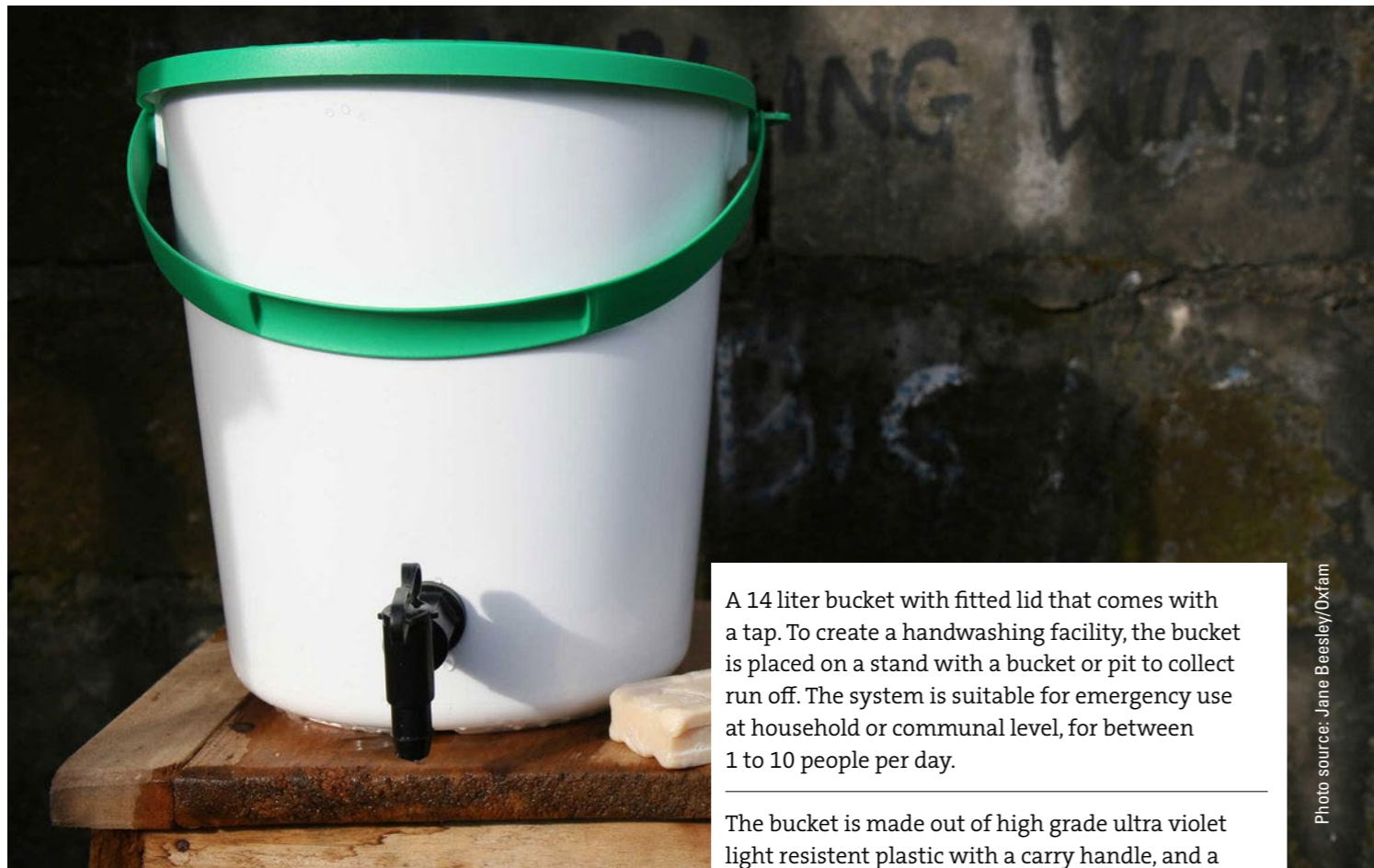


Photo source: Jane Beesley/Oxfam

A 14 liter bucket with fitted lid that comes with a tap. To create a handwashing facility, the bucket is placed on a stand with a bucket or pit to collect run off. The system is suitable for emergency use at household or communal level, for between 1 to 10 people per day.

The bucket is made out of high grade ultra violet light resistant plastic with a carry handle, and a smooth bottom which makes it more comfortable to carry it on the head.

The water availability relies on regular manual refilling.

The taps provided with Oxfam jerry buckets are all the same – they are simple open/close valve taps that have quite a high flow rate. The hole in the bucket is also the right size to accommodate the Oxfam Handy Tap, which is a water conserving tap, with antimicrobial brass.

The water used for handwashing might be collected in a container placed below. The collected greywater requires the discharge into a functional greywater system or into a soil infiltration system.

It is suitable for the use in schools, health clinics, households and other public spaces.

The system is simple and low in cost. It is not usually locally available, although local versions can be made. This design of jerry bucket is now made and used by many large NGOs that have supply facilities including IFRC, Unicef and UNHCR.

> Individual handwashing facility
 > Developed by Oxfam
<https://bit.ly/3qi0CUK>

Oxfam > Jerry bucket

Container with manual refilling

Mobile facility without drainage or with soil infiltration

EMERGENCY: ✓

Oxfam Jerry bucket

KEY ASPECTS		OPTIONS	RANKING
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day	++
		2 – 50 people, up to 200 events per day	+
		50 – 500 people, up to 1000 events per day	
Intended use	Serving entire public space or entire institution		
	Serving specific area of a public space or an institution		++
	Serving one household		
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	
		Storage tank refilled through piped water supply, tanker truck, rainwater	
		Storage tank refilled manually	++
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	++
		Direct connection to sewer network	
		Wastewater storage container with subsequent disposal	+
USER INTERFACE	Number of taps/outlets per unit	1	+
		2 – 4	
		5 – 10	
		> 11	
		Type of tap/outlet	Taps requiring hand contact for operation
	Number of users washing hands at the same time	Reduced hand contamination	
		Contactless tap/outlet	
		1	+
	Accessibility	2 – 4	
		5 – 10	
		> 11	
	Availability and type of soap dispenser	Children	+
People with disabilities		+	
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Soap dispenser	
		Tray	
		Standard: 500 – 1000 ml	++
		Water-saving: 250 – 500 ml	
	Production: type of materials and location	Water-saving: 30 – 50 ml	
		Water-recycling: 5 ml	
		On-site production	
		On-site assembly	
	Installation	Prefabricated: produced locally	
		Prefabricated: produced centrally	
		Prefabricated: imported	++
	O&M	Time	> 3 days
Skills		1 – 3 day	
		Advanced	
		Basic	++
Costs		< 1 day	++
		High costs	
Durability and expected timespan	Low costs	++	
	Daily	+	
	Weekly		
Risk of vandalism and theft	> Weekly		
	Advanced		
	Basic	++	
ADDITIONAL SPECIFICATIONS	Costs	High costs	
		Low costs	++
	Durability and expected timespan	5 – 10 years	
		2 – 5 years	
Risk of vandalism and theft	1 – 2 years	++	
	< 1 year		
Durability and expected timespan	High risk	+	
	Low risk		

PATH

> Enabling hand hygiene everywhere for everyone (draft)

Container with manual refilling

Mobile facility with integrated wastewater collection tank and one tap/outlet

EMERGENCY: ✓

The PATH handwashing station is a free standing single unit.

Water availability relies on manual refilling of the water tank. The taps are hand operated.

Underneath is a greywater storage tank that need to emptied on a regular basis.

The system is suitable for refugee camps, hospitals, health facilities and schools.

It is a low cost construction devices. It can be produced locally. The installation and assemblage are fast, simple and can be set up in various places. The maintenance is easy and does not require specialized tools.

> Individual handwashing facility
> Developed by PATH Devices and Tools Global Program
<https://bit.ly/3MBdyRq>



Photo source: PATH/Jesse Schuber

	KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day	++	
		2 – 50 people, up to 200 events per day	+	
		50 – 500 people, up to 1000 events per day		
	Intended use	Serving entire public space or entire institution		
		Serving specific area of a public space or an institution	++	
		Serving one household		
WATER SUPPLY	Type of water supply system and water source used	Piped water supply		
		Storage tank refilled through piped water supply, tanker truck, rainwater		
		Storage tank refilled manually	++	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration		
		Direct connection to sewer network		
		Wastewater storage container with subsequent disposal	++	
USER INTERFACE	Number of taps/outlets per unit	1	++	
		2 – 4		
		5 – 10		
		> 11		
	Type of tap/outlet	Taps requiring hand contact for operation	++	
		Reduced hand contamination		
		Contactless tap/outlet		
	Number of users washing hands at the same time	1	++	
		2 – 4		
5 – 10				
> 11				
Accessibility	Children	+		
	People with disabilities	+		
Availability and type of soap dispenser *	Soap dispenser			
	Tray			
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing *	Standard: 500 – 1000 ml		
		Water-saving: 250 – 500 ml		
		Water-saving: 30 – 50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location *	On-site production		
		On-site assembly		
		Prefabricated: produced locally		
		Prefabricated: produced centrally		
			Prefabricated: imported	
		Installation	Time *	> 3 days
	1 – 3 day			
	< 1 day			
	Skills *	Advanced		
		Basic		
	Costs	High costs		
		Low costs	++	
O&M *	Time	Daily		
		Weekly		
		> Weekly		
	Skills	Advanced		
		Basic		
	Costs	High costs		
	Low costs			
Durability and expected timespan *	5 – 10 years			
	2 – 5 years			
	1 – 2 years			
	< 1 year			
Risk of vandalism and theft *	High risk			
	Low risk			
ADDITIONAL SPECIFICATIONS				

PATH Enabling hand hygiene everywhere for everyone

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org



Photo source: PSI

The PSI handwashing facility is composed of two plastic buckets placed on an adapted wooden stool.

The upper supply bucket of variable size is sitting on the stool and is to be refilled manually. The smaller bottom waste bucket sits on a wooden shelf that is attached to the stool. The greywater is collected through a plastic-sieve cover.

The wash water is regulated by a single hand operated plastic or stainless-steel tap. Optionally, the construction can be modified for foot pedal operation.

It is a hands-free model limiting spreading of infection diseases.

The system can be used in public institutions like schools and healthcare centers .

The low-cost construction of the device can be implemented by locals. The installation and assembly are fast and simple and the maintenance easy with no need for specialized tools.

> Individual handwashing facility
 > Developed by PSI
www.psi.org/2020/06/covid19-handwashing-stations

PSI

> One person handwashing facility (draft)

Container with manual refilling

Mobile facility with integrated wastewater collection tank and one tap/outlet

EMERGENCY: ✓

KEY ASPECTS		OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day	++	
		2 – 50 people, up to 200 events per day	+	
		50 – 500 people, up to 1000 events per day		
Intended use	Serving entire public space or entire institution			
	Serving specific area of a public space or an institution	+		
	Serving one household	++		
WATER SUPPLY	Type of water supply system and water source used	Piped water supply		
		Storage tank refilled through piped water supply, tanker truck, rainwater		
		Storage tank refilled manually	++	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration		
		Direct connection to sewer network		
		Wastewater storage container with subsequent disposal	++	
USER INTERFACE	Number of taps/outlets per unit	1	++	
		2 – 4		
		5 – 10		
		> 11		
		Type of tap/outlet	Taps requiring hand contact for operation	++
	Number of users washing hands at the same time	Reduced hand contamination	+	
		Contactless tap/outlet		
		1	++	
		2 – 4		
		5 – 10		
	Accessibility	> 11		
		Children	+	
Availability and type of soap dispenser *	People with disabilities			
	Soap dispenser			
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing *	Tray		
		Standard: 500 – 1000 ml		
		Water-saving: 250 – 500 ml		
		Water-saving: 30 – 50 ml		
	Production: type of materials and location	Water-recycling: 5 ml		
		On-site production		
		On-site assembly		
		Prefabricated: produced locally	++	
	Installation	Prefabricated: produced centrally		
		Prefabricated: imported		
		Time	> 3 days	
		1 – 3 day		
Skills	< 1 day	+		
	Advanced			
	Basic	+		
	Costs	High costs		
O&M	Low costs	++		
	Time	Daily	++	
	Weekly			
	> Weekly			
Skills	Advanced			
	Basic	++		
	Costs	High costs		
Durability and expected timespan *	Low costs	++		
	5 – 10 years			
	2 – 5 years			
	1 – 2 years			
Risk of vandalism and theft *	< 1 year			
	High risk			
ADDITIONAL SPECIFICATIONS	Low risk			

PSI One person handwashing facility

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org

SATO

> SATO tap – a new handwashing solution for all

Bottle with manual refilling

Mobile facility without drainage or with soil infiltration

EMERGENCY: ✓



The SATO Tap can be connected to a common PET bottle (diameter cap: 30 millimeter). The mobile design allows for practicing hand hygiene wherever it is needed.

SATO Tap is refilled manually. The water can be collected in a bucket or used with direct soil infiltration.

To release water the nozzle is tipped down and handwashing is then possible under a steady flow. Tipped back the water flow stops. This allows to use the handwashing station multiple times before refilling.

The tap is operated with the elbow reducing the risk of contamination.

The design relies on pressure and gravity to create a simple on-and-off mechanism. It is a solution for every household or public institution.

The use of PET bottles as tanks allows the use all around the world.

> Individual handwashing facility
 > Developed by Daigo Ishiyama,
 Chief Design Engineer of SATO
www.sato.lixil.com/satotap

Photo sources: SATO (lixil.com)



	KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1–10 people, up to 20 events per day	++	
		2–50 people, up to 200 events per day	+	
		50–500 people, up to 1000 events per day		
	Intended use	Serving entire public space or entire institution		
Serving specific area of a public space or an institution		+		
Serving one household		++		
WATER SUPPLY	Type of water supply system and water source used	Piped water supply		
		Storage tank refilled through piped water supply, tanker truck, rainwater		
		Storage tank refilled manually	++	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	++	
		Direct connection to sewer network		
		Wastewater storage container with subsequent disposal	+	
USER INTERFACE	Number of taps/outlets per unit	1	++	
		2–4		
		5–10		
		>11		
		Type of tap/outlet	Taps requiring hand contact for operation	++
	Number of users washing hands at the same time	Reduced hand contamination	+	
		Contactless tap/outlet		
		1	++	
		2–4		
		5–10		
Accessibility	Children	+		
	People with disabilities	+		
Availability and type of soap dispenser	Soap dispenser			
	Tray	++		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing *	Standard: 500–1000 ml		
		Water-saving: 250–500 ml		
		Water-saving: 30–50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location	On-site production		
		On-site assembly	++	
		Prefabricated: produced locally		
		Prefabricated: produced centrally	+	
	Installation	Time	> 3 days	
			1–3 day	
< 1 day			++	
Skills		Advanced		
		Basic	++	
		Costs	High costs	
O&M	Time	Low costs	++	
		Daily		
		Weekly	+	
Skills	> Weekly			
	Advanced			
	Basic	++		
Costs	High costs			
	Low costs	++		
	Durability and expected timespan	5–10 years	+	
Risk of vandalism and theft	2–5 years			
	1–2 years			
	< 1 year			
	High risk			
ADDITIONAL SPECIFICATIONS	Low risk	+		

SATO SATO tap – a new handwashing solution for all

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org

Spatap

> Portable tap, multiflow water saving dispensing

Container with manual refilling

Mobile facility without drainage or with soil infiltration; silicone tap attached to bottle filled manually

EMERGENCY: ✓



The Spatap Silicone transforms regular PET bottles (1 to 20 liter) into a flow controllable tap. It can be hung in situ at a school or household or handheld for portable use.

Water availability relies on manual refilling that is a 10 second procedure. Children are taught maintenance and operation.

The Spatap Silicone fitting allows for three different, efficient water flows – minimal, free flow and big wash. Users can choose a flow rate to suit water scarcity conditions. A teacher can use the free flow mode by simply removing the bung and letting the water flow. All students may wash their hands with no touch one after the next. The base of the inverted bottle is used for easy storage and access to a soap bar.

Wastewater is directed to a French drain that is built by the children or community as a project. Planting around a Spatap handwash station is used to absorb wastewater. As an alternative a bucket can be used to catch grey water to flush toilets or water plants.

The Spatap is suitable for personal use, single households, or schools. Long term development where no plumbed in mains water supply exists and emergencies where water is scarce.

The Spatap is simple to use and affordable. A durable silicone product with a 10 years+ life span and water and food grade certification.

The instant handwashing facility with low cost and high impact, is quickly deployed and scalable.

- > Individual and group handwashing facility
- > Developed by SPATAP
<https://spatap.com/shop>
- > Video: no touch handwashing demonstration:
<https://bit.ly/3wECL4Y>
- > Video: the three different modes to water dispensing:
<https://bit.ly/3wFi3X>

Photo sources: Spatap. Top: water scarcity, Solomon Islands; middle: free flow mode, Fiji; below: soap caddy, Papua New Guinea

	KEY ASPECTS	OPTIONS	RANKING
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day	++
		2 – 50 people, up to 200 events per day	+
		50 – 500 people, up to 1000 events per day	
	Intended use	Serving entire public space or entire institution	+
		Serving specific area of a public space or an institution	++
		Serving one household	++
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	
		Storage tank refilled through piped water supply, tanker truck, rainwater	
		Storage tank refilled manually	++
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	++
		Direct connection to sewer network	
		Wastewater storage container with subsequent disposal	
USER INTERFACE	Number of taps/outlets per unit	1	++
		2 – 4	
		5 – 10	
		> 11	
		Type of tap/outlet	Taps requiring hand contact for operation
		Reduced hand contamination	++
		Contactless tap/outlet	
	Number of users washing hands at the same time	1	
		2 – 4	+
		5 – 10	
> 11			
Accessibility	Children	++	
	People with disabilities	++	
Availability and type of soap dispenser	Soap dispenser		
	Tray	++	
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Standard: 500 – 1000 ml	
		Water-saving: 250 – 500 ml	
		Water-saving: 30 – 50 ml	++
		Water-recycling: 5 ml	
	Production: type of materials and location	On-site production	
		On-site assembly	++
		Prefabricated: produced locally	
		Prefabricated: produced centrally	
		Prefabricated: imported	++
	Installation	Time	> 3 days
1 – 3 day			
< 1 day			++
Skills		Advanced	
		Basic	++
		Costs	High costs
	Low costs	+	
O&M	Time	Daily	++
		Weekly	
		> Weekly	
	Skills	Advanced	
		Basic	++
	Costs	High costs	
	Low costs	++	
Durability and expected timespan	5 – 10 years	++	
	2 – 5 years		
	1 – 2 years		
	< 1 year		
Risk of vandalism and theft	High risk		
	Low risk	++	
ADDITIONAL SPECIFICATIONS	Water saving efficiency	High efficiency	++
		Low efficiency	

Spatap Portable tap, multiple tap water saving dispensing



Photo sources: USAID

The Povu Poa is available in bucket and pipe configurations. The bucket model (photo above left) has two 20 liter buckets, one supply bucket with a single tap and one waste bucket, connected vertically. The pipe model (photo above right) has a 5 liter pipe, which can be attached to any vertical structure like walls, trees, etc. The system's capacity allows up to 200 handwashing events per day.

The water availability relies on the effort of refilling as both variations are manually to be refilled.

The bucket model includes a waste bucket, and the pipe model can be used with direct soil infiltration as a drainage system. A foam soap dispenser is attached, reducing the risk of theft.

The system is designed for individual handwashing with a swinging tap. It can also be operated with the back of the hand and the wrist, limiting the spreading of infection diseases.

The system is suitable for clinics, schools and households.

Both models are low-cost, water and soap efficient facilities. The maintenance of the simple construction is easy.

> Individual handwashing facility
 > Developed with funding from the USAID Global Development Lab's Development Innovation Ventures program BY the team of researchers from Innovations for Poverty Action who partnered with engineers from Catapult Design
www.ghspjournal.org/content/4/2/336

USAID > Povu Poa (draft)

Container with manual refilling

Mobile facility with integrated wastewater collection tank

EMERGENCY: ✓

	KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day	+	
		2 – 50 people, up to 200 events per day	++	
		50 – 500 people, up to 1000 events per day		
Intended use		Serving entire public space or entire institution		
		Serving specific area of a public space or an institution	++	
		Serving one household	++	
WATER SUPPLY	Type of water supply system and water source used	Piped water supply		
		Storage tank refilled through piped water supply, tanker truck, rainwater		
		Storage tank refilled manually	++	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	+	
		Direct connection to sewer network		
		Wastewater storage container with subsequent disposal	++	
USER INTERFACE	Number of taps/outlets per unit	1	++	
		2 – 4		
		5 – 10		
		> 11		
		Type of tap/outlet	Taps requiring hand contact for operation	++
	Number of users washing hands at the same time		Reduced hand contamination	
			Contactless tap/outlet	
			1	++
			2 – 4	
			5 – 10	
Accessibility		> 11		
		Children	++	
Availability and type of soap dispenser		People with disabilities		
		Soap dispenser	+	
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Tray		
		Standard: 500 – 1000 ml		
		Water-saving: 250 – 500 ml	++	
		Water-saving: 30 – 50 ml		
	Production: type of materials and location		Water-recycling: 5 ml	
			On-site production	
			On-site assembly	
			Prefabricated: produced locally	
	Installation	Time *	Prefabricated: produced centrally	+
			Prefabricated: imported	+
O&M	Time	> 3 days		
		1 – 3 day		
		< 1 day		
	Skills		Advanced	
			Basic	+
			Costs	High costs
Durability and expected timespan		Low costs	++	
		Daily	+	
		Weekly		
Risk of vandalism and theft		> Weekly		
		Advanced		
		Basic	++	
Durability and expected timespan		High costs		
		Low costs	++	
		5 – 10 years		
Durability and expected timespan		2 – 5 years		
		1 – 2 years	+	
		< 1 year	+	
		High risk	+	
Durability and expected timespan		Low risk		
		Low risk		
ADDITIONAL SPECIFICATIONS				

USAID Povu Poa

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org

WaterSHED > Happy Tap or LaBobo

Container with manual refilling

Mobile facility without drainage or with soil infiltration



HappyTap's key features are its portability and visual appeal. Placing it exactly where hands need to be washed reduces inconvenience, which is the most significant barrier to handwashing. Making it attractive and noticeable reinforces behaviour change.

HappyTap is refilled manually and a tray collects used water, which is drained to an external container.

The water outlet is a water-saving spout (spraying from multiple nozzles) with minimal hand-contact tap option. Water use per handwashing event is low (15 liter for 50 to 70 uses). The system includes a soap tray for both liquid and bar soap.

The product is currently available in Southeast Asia and South Asia, as well as Kenya and Madagascar. It is used in households, schools, and health clinics.

The system is prefabricated, low in installation and operating costs, and comes with a 5-year warranty in most countries. The components can be 'nested' for efficient transport.

- > Individual handwashing facility
- > Developed by WaterSHED
www.happytap.net
- > Video: 6 proper steps of handwashing with soap with LaBobo
www.youtube.com/watch?v=f0Fd2Mq8mLM



Photo sources: WaterSHED

KEY ASPECTS		OPTIONS	RANKING
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1 – 10 people, up to 20 events per day	++
		2 – 50 people, up to 200 events per day	
		50 – 500 people, up to 1000 events per day	
Intended use	Serving entire public space or entire institution		
	Serving specific area of a public space or an institution	++	
	Serving one household	++	
WATER SUPPLY	Type of water supply system and water source used	Piped water supply	
		Storage tank refilled through piped water supply, tanker truck, rainwater	
		Storage tank refilled manually	++
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration	
		Direct connection to sewer network	
		Wastewater storage container with subsequent disposal	++
USER INTERFACE	Number of taps/outlets per unit	1	++
		2 – 4	
		5 – 10	
		> 11	
		Type of tap/outlet	Taps requiring hand contact for operation
	Number of users washing hands at the same time	Reduced hand contamination	++
		Contactless tap/outlet	
		1	++
		2 – 4	
		5 – 10	
Accessibility	> 11		
	Children	++	
Availability and type of soap dispenser	People with disabilities	++	
	Soap dispenser	+	
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Tray	
		Standard: 500 – 1000 ml	
		Water-saving: 250 – 500 ml	
		Water-saving: 30 – 50 ml	++
	Production: type of materials and location	Water-recycling: 5 ml	
		On-site production	
		On-site assembly	++
		Prefabricated: produced locally	++
	Installation	Prefabricated: produced centrally	++
		Prefabricated: imported	++
Time	> 3 days		
	1 – 3 day		
	< 1 day	+	
Skills	Advanced		
	Basic	++	
Costs	High costs		
	Low costs	++	
O&M	Daily	+	
	Weekly		
	> Weekly		
Skills	Advanced		
	Basic	++	
Costs	High costs		
	Low costs	+	
Durability and expected timespan	5 – 10 years	+	
	2 – 5 years		
	1 – 2 years		
	< 1 year		
Risk of vandalism and theft	High risk	+	
	Low risk		
ADDITIONAL SPECIFICATIONS			

WaterSHED Happy Tap or LaBobo

→ HappyTap is now manufactured in Vietnam, Bangladesh, India, and soon in Kenya and Nigeria. It's locally produced in those places, while imported in other places.

4.

Handwashing facilities with water recycling



Photo sources: Eawag



Eawag > The Blue Diversion Autarky (draft)

Water recycling

Permanent facility



The Blue diversion autarky system recycles handwashing water using a simplified membrane bioreactor and electochlorination powered by a solar panel placed at the top. Currently, only a few prototypes are available, and no production is in place. The system works rather well for up to 200 handwashing events per day.

The system is refilled once, and water is recycled. No need to replace water over time and no drainage is required.

The handwashing station can be placed in public spaces or trainstations.

The recycled water is of high quality. Further all of the water is recycled. Therefore, it is an attractive design. But it is very bulky and requires solar panels leading to the need of advanced working skills.

The system is prefabricated, low in installation and operating costs. It is relatively bulky to transport, and the plastic might damage.

- > Individual and group handwashing facility
- > Developed by Blue diversion AUTARKY/Eawag <https://bit.ly/3KUIVIV>

		KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day		1 – 10 people, up to 20 events per day	+	
			2 – 50 people, up to 200 events per day	++	
			50 – 500 people, up to 1000 events per day		
	Intended use		Serving entire public space or entire institution	+	
			Serving specific area of a public space or an institution		
			Serving one household		
WATER SUPPLY	Type of water supply system and water source used		Piped water supply		
			Storage tank refilled through piped water supply, tanker truck, rainwater	++	
			Storage tank refilled manually	+	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system		Direct soil infiltration		
			Direct connection to sewer network		
			Wastewater storage container with subsequent disposal		
USER INTERFACE	Number of taps/outlets per unit		1	++	
			2 – 4		
			5 – 10		
			> 11		
	Type of tap/outlet		Taps requiring hand contact for operation	++	
			Reduced hand contamination		
			Contactless tap/outlet		
	Number of users washing hands at the same time		1	++	
			2 – 4		
			5 – 10		
			> 11		
Accessibility		Children *			
		People with disabilities			
Availability and type of soap dispenser		Soap dispenser	++		
		Tray			
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing		Standard: 500 – 1000 ml		
			Water-saving: 250 – 500 ml	++	
			Water-saving: 30 – 50 ml		
			Water-recycling: 5 ml	++	
	Production: type of materials and location *		On-site production		
		On-site assembly			
		Prefabricated: produced locally			
		Prefabricated: produced centrally			
Installation	Time *		> 3 days		
			1 – 3 day		
			< 1 day		
	Skills		Advanced	+	
			Basic		
	Costs		High costs	++	
			Low costs		
	O&M	Time		Daily	
				Weekly	
				> Weekly	+
		Skills		Advanced	+
				Basic	
Costs			High costs	+	
Durability and expected timespan		5 – 10 years			
		2 – 5 years	+		
		1 – 2 years			
		< 1 year			
Risk of vandalism and theft		High risk	++		
		Low risk			
ADDITIONAL SPECIFICATIONS					

Eawag The Blue Diversion Autarky

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org



Photo source: Gravit'eau

Gravit'eau handwashing systems recycle handwashing water. It is sufficient for 1000 handwashing events per day.

The 80 liter tank needs to be refilled manually ever 2 to 4 weeks in combination of the wastewater disposal. The featured system has four water outlets. The water is recycled and treated within the system. The recycling reduces the water use down to 5 milliliter per person.

Systems available for different scales and can be produced locally, with exception of few key parts. Systems can be integrated with the locally available interface design if needed and adapted for different scales.

The handwashing system is suitable for schools, health care facilities, public spaces, in water-scarce areas or refugee camps

Local production of the system is possible but key components (membrane module) needs to be imported.

- > Individual and group handwashing facility
- > Developed by Gravit'eau
www.graviteau.ch
www.facebook.com/Graviteau

Gravit'eau > Handwashing system (draft)

Water recycling

Mobile facility

EMERGENCY: ✓

		KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day		1 – 10 people, up to 20 events per day	+	
			2 – 50 people, up to 200 events per day	++	
			50 – 500 people, up to 1000 events per day	++	
		Intended use	Serving entire public space or entire institution		
		Serving specific area of a public space or an institution			
		Serving one household			
WATER SUPPLY	Type of water supply system and water source used		Piped water supply		
			Storage tank refilled through piped water supply, tanker truck, rainwater	+	
			Storage tank refilled manually	+	
GREYWATER MANAGEMENT / DRAINAGE	Type of drainage system		Direct soil infiltration		
			Direct connection to sewer network		
			Wastewater storage container with subsequent disposal	+	
USER INTERFACE	Number of taps/outlets per unit		1		
			2 – 4	++	
			5 – 10		
			> 11		
			Type of tap/outlet	Taps requiring hand contact for operation	+
			Reduced hand contamination		
			Contactless tap/outlet		
		Number of users washing hands at the same time		1	
				2 – 4	++
				5 – 10	
				> 11	
		Accessibility		Children	++
			People with disabilities	++	
	Availability and type of soap dispenser		Soap dispenser	++	
			Tray		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing		Standard: 500 – 1000 ml		
			Water-saving: 250 – 500 ml		
			Water-saving: 30 – 50 ml		
			Water-recycling: 5 ml	++	
	Production: type of materials and location		On-site production		
			On-site assembly		
			Prefabricated: produced locally	++	
			Prefabricated: produced centrally		
			Prefabricated: imported	+	
	Installation	Time *		> 3 days	
				1 – 3 day	
				< 1 day	
		Skills	Advanced	++	
			Basic		
		Costs	High costs	+	
		Low costs			
O&M	Time		Daily		
			Weekly		
			> Weekly	+	
		Skills	Advanced	++	
			Basic		
		Costs	High costs		
		Low costs	+		
Durability and expected timespan		5 – 10 years			
		2 – 5 years	+		
		1 – 2 years			
		< 1 year			
Risk of vandalism and theft		High risk			
		Low risk	+		
ADDITIONAL SPECIFICATIONS					

Gravit'eau Handwashing facility

*If you have field experience with the system, feel free to add to the ranking. Use the PDF comment function: "+" partially well, "++" rather well. Sent it to: info@susana.org

For providers

If you have an additional example, you would like us to add to the publication, please send the two filled-out templates to susana@info.org

TEMPLATE 1: FACT SHEET / GENERAL INFORMATION

NAME OF THE ORGANISATION:

NAME OF THE HANDWASHING FACILITY:

MAIN CATEGORIES: WHAT IS THE WATER SUPPLY MODE OF THE HANDWASHING FACILITY?

- Connected to a piped water network or storage tank
- Connected to a piped water network or storage tank, or manual refilling
- Manual refilling
- Water recycling

SUBCATEGORIES: WHAT IS THE MOBILITY OF THE HANDWASHING FACILITY?

- Permanent facilities
- Permanent or semi-mobile facilities
- Mobile facilities

MAIN FEATURE: WHAT IS THE MAIN FEATURE OF THE HANDWASHING FACILITY IN ONE SENTENCE?

SHORT DESCRIPTION: PLEASE PROVIDE IN A SEPARATE DOCUMENT A BRIEF DESCRIPTION OF THE FACILITY ADDRESSING THE FOLLOWING KEY ASPECTS (IN TOTAL A MAXIMUM OF 200 WORDS):

- > What is the scale and intended use of the facility?
- > How is the facility installed?
- > How is the water supplied for this facility?
- > How is the drainage and greywater management?
- > How is the facility adjusted to the COVID-19 pandemic?
- > What is the user interface of the facility?
- > What are technical specifications of the facility?

FURTHER QUESTIONS:

- > Is it an individual or a group handwashing facility or both?
 - Individual
 - Group
- > Can the handwashing facility be used in Emergency's?
 - Yes
 - No
- > Please provide a link where further information about the hand washing facility can be found:

- > Please provide 1 to 3 images as well as the photo credits that can be used in the publication:

IMAGE 01
Name:
Photo credits:

IMAGE 02
Name:
Photo credits:

IMAGE 02
Name:
Photo credits:

TEMPLATE 2: TABLE / RANKING

	KEY ASPECTS	OPTIONS	RANKING	
SCALE AND INTENDED USE	Capacity: number of users and handwashing events per day	1–10 people, up to 20 events per day 2–50 people, up to 200 events per day 50–500 people, up to 1000 events per day		
	Intended use	Serving entire public space or entire institution		
		Serving specific area of a public space or an institution		
Serving one household				
WATER SUPPLY	Type of water supply system and water source used	Piped water supply		
		Storage tank refilled through piped water supply, tanker truck, rainwater		
		Storage tank refilled manually		
GREY WATER MANAGEMENT / DRAINAGE	Type of drainage system	Direct soil infiltration		
		Direct connection to sewer network		
		Wastewater storage container with subsequent disposal		
USER INTERFACE	Number of taps/outlets per unit	1		
		2–4		
		5–10		
		> 11		
		Type of tap/outlet	Taps requiring hand contact for operation Reduced hand contamination Contactless tap/outlet	
	Number of users washing hands at the same time	1		
		2–4		
		5–10		
		> 11		
		Accessibility	Children People with disabilities	
	Availability and type of soap dispenser	Soap dispenser		
		Tray		
TECHNICAL SPECIFICATIONS	Water use efficiency: water used per handwashing	Standard: 500–1000 ml		
		Water-saving: 250–500 ml		
		Water-saving: 30–50 ml		
		Water-recycling: 5 ml		
	Production: type of materials and location	On-site production		
		On-site assembly		
		Prefabricated: produced locally		
		Prefabricated: produced centrally		
	Installation	Time *	> 3 days	
			1–3 day	
			< 1 day	
		Skills	Advanced	
Basic				
Costs			High costs Low costs	
O&M	Time	Daily		
		Weekly		
		> Weekly		
	Skills	Advanced Basic		
Costs	High costs			
	Low costs			
Durability and expected timespan	5–10 years			
	2–5 years			
	1–2 years			
	< 1 year			
Risk of vandalism and theft	High risk			
	Low risk			
ADDITIONAL SPECIFICATIONS				

Rank to define your handwashing facility:
Partially well: +
Rather well: ++
 Sent the filled-out template to:
info@susana.org

Table with 6 columns of plus signs (+) indicating page ranges for various sections.

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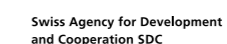
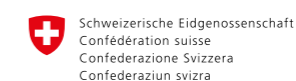
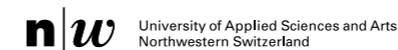
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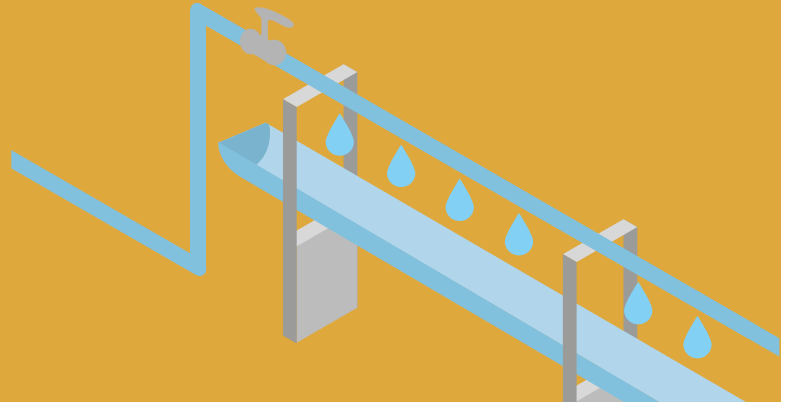
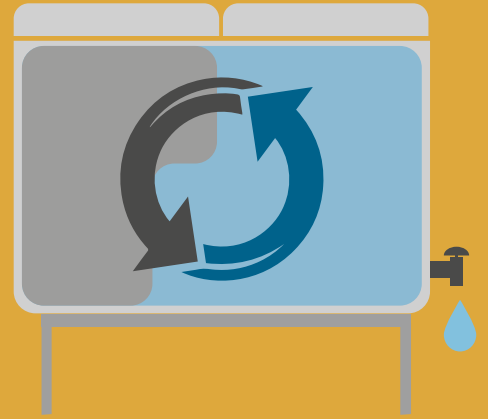
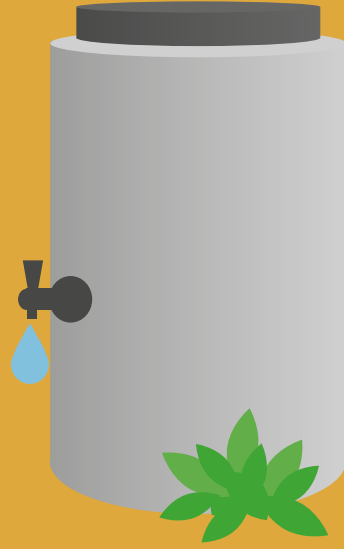
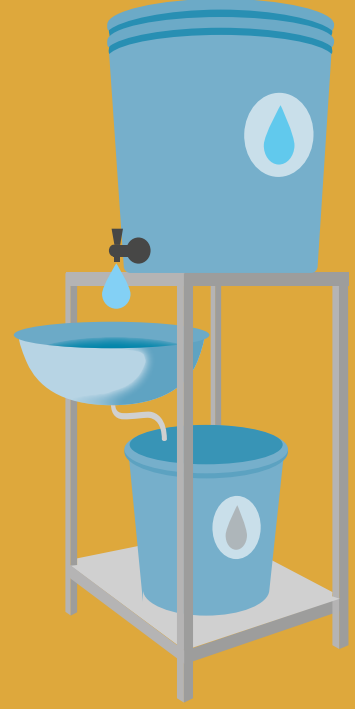
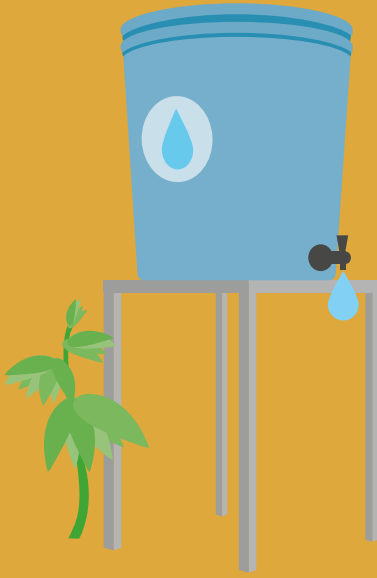
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