

Handwashing Facilities Annex



Contents: Handwashing Facilities

1. Connected to a piped water network or storage tank

Permanent facilities
GIZ Sanitation for Millions > Millions of Clean Hands (MOCH) station
WaterAID / > Handwashing facility for bus stops > Ceramic basin handwashing facility
Permanent or semi-mobile facilities
Splash Social Enterprises Splash handwashing station
Unicef > Hands-on Nepal 01 > Hands-on Nepal 02
Mobile facilities
Poly John > PS14-1000 portable handwashing sink

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

Permanent or semi-mobile facilities
GIZ Fit for School > WASHaLOT 3.0
Oxfam > Foot-operated handwashing facility in camps
WaterAID > Foot-operated handwashing facility for 4 users
Mobile facilities
WaterAID > Foot-operated handwashing facility for 1 to 2 users > Handwashing facility for children with disabilities

3. Manual refilling

Permanent or semi-mobile facilities
Tippy Tap
SNV > Kanyaga Kanyaga “Step on it, step on it”
Mobile facilities
ARUP > Handwashing in emergencies
Oxfam > Jerry bucket > OHS - the future of handwashing in emergencies
PATH > One person handwashing facility
PSI > One person handwashing facility
Spatap > Portable tap
USAID > Povu Poa
WaterSHED > Happy Tap or LaBobo

4. Water recycling

Permanent facilities
Eawag > The Blue Diversion Autarky
Mobile facilities
Gravit`eau > Handwashing system with water recycling

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 until May 2022.

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 criterions. 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>

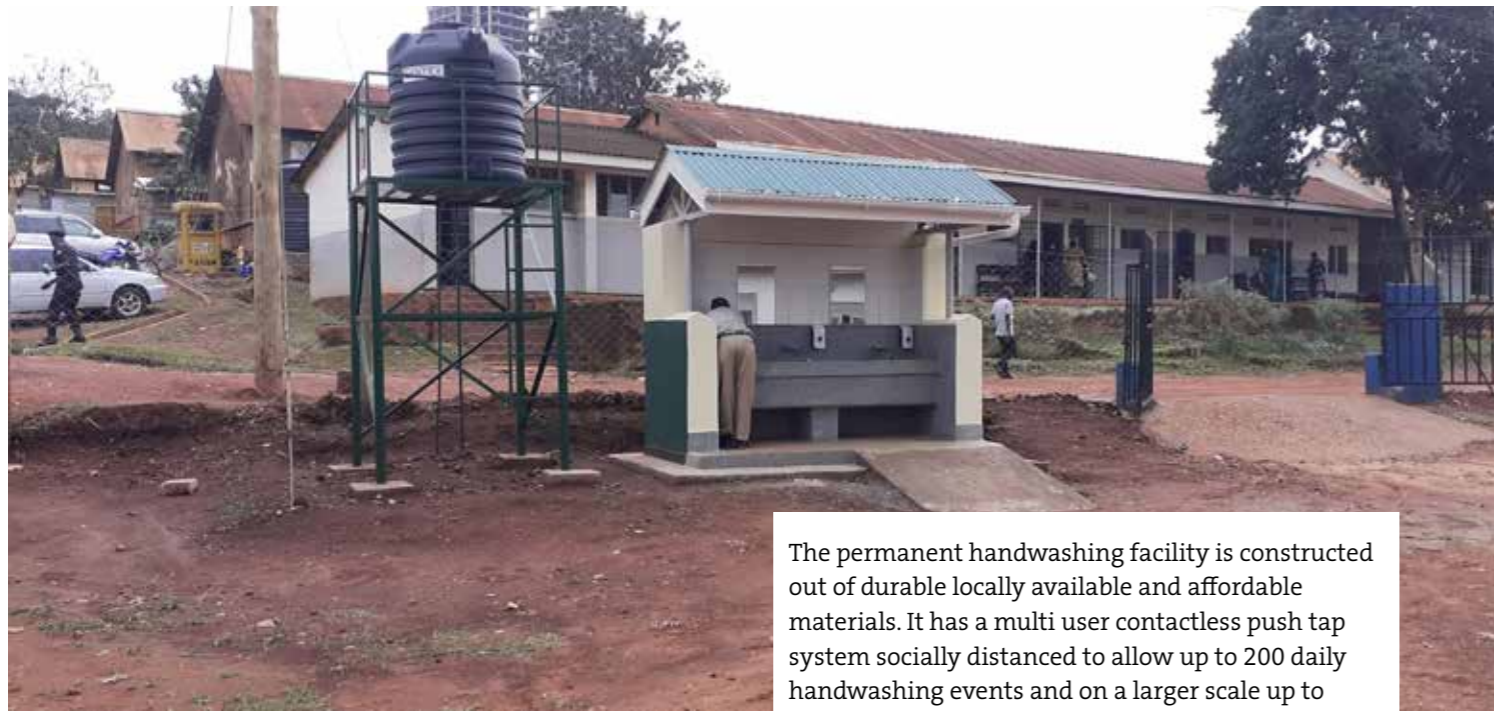


You have developed your own handwashing facility?

Fill out the templates about your handwashing facility and sent them to info@susana.org



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 socially distanced to allow up to 200 daily handwashing events and on a larger scale up to 1000 events. Its 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 700 mm 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 social distancing. Its appeal and standout attractiveness makes it nudge users to hand washing 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, one site assembly works rather well. The maintenance can be conducted by local craft workers.

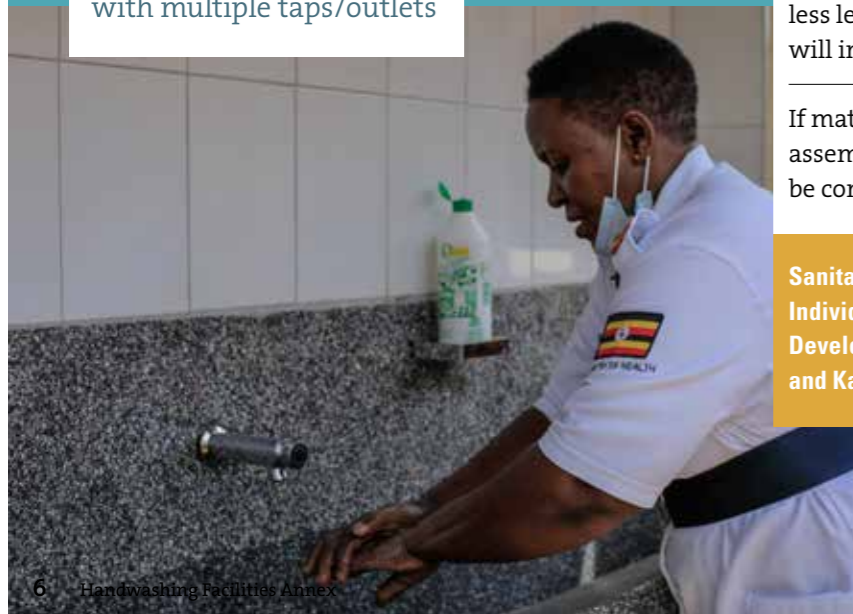
Sanitation for Millions Uganda
Individual and group handwashing facility
Developed by Sanitation for Millions Uganda and Kampala City Authority (KCCA)

Photo/Top: MoCH by Nsambya police station, Kampala. Source: Sanitation 4 Millions
Photo/Left: Health worker demonstrates handwashing steps at MoCH Station in Kampala, Uganda.

GIZ Sanitation for 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	++	
	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				



Photo source: WaterAid

WaterAid > Handwashing facility for bus stops (draft)

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 six people can wash their hands at once, which saves time queueing.

The system is suitable 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.

WaterAid Rwanda
Individual and group handwashing facility
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) and sent it to info@susana.org

WaterAid > Ceramic basin handwashing facility (draft)

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 one 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 other taps (elbow operated or a pedal) are used sometimes. Wastewater can be safely disposed of as the basins are connected to the local wastewater system.

Social 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, healthcare 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.

WaterAid Pakistan
Individual and group handwashing facility
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		
	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					

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) and sent it to info@susana.org

Splash Social Enterprises

> Splash handwashing station (draft)

Connected to a piped water network or storage tank

Permanent or semi-mobile facility with two taps per sink

The permanent handwashing facility constructed out of durable locally available and affordable 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 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 should 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 construction of the devices can occur in target countries by locals and is at low-cost. The used plastic is durable and eco-friendly with recycled content. The installation is fast and simple, and maintenance is easy as specialized tools are not necessary.

Individual and group handwashing facility
Developed by Splash Social Enterprises

Photo source:
Splash 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	++
	Number of users washing hands at the same time		Reduced hand contamination	
			Contactless tap/outlet	
			1	
			2 – 4	++
	Accessibility		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	Time	Prefabricated: produced locally	
			Prefabricated: produced centrally	++
			Prefabricated: imported	
		Skills *	> 3 days	
1 – 3 day			+	
< 1 day				
	Costs	Advanced		
		Basic		
O&M	Time	High costs		
		Low costs	+	
		Daily		
	Skills *	Weekly		
		> Weekly	+	
		Advanced		
	Costs	Basic		
		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				

Splash Social Enterprises Splash handwashing station

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

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 two or four 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 than relies on manual refills.

The elbow operated tap allows for contact-free operation if used correctly. Soap dispensers are included. For drainage it requires the connection to 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.

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

Photos source: 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) and sent it to info@susana.org



Photos 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 2-50 people up to 50-500 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 tanker.

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 for better 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.

Unicef Nepal
Individual and group handwashing facility
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	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			
	2 – 5 years			
	1 – 2 years			
	< 1 year			
Risk of vandalism and theft *	High risk			
	Low risk			
ADDITIONAL SPECIFICATIONS				

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) and 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 (75L). 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.

PolyJohn
Individual and group handwashing facility
<https://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) and sent it to info@susana.org

2.

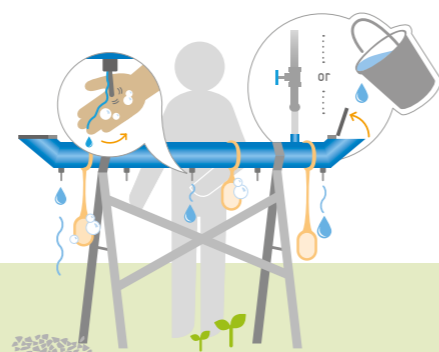
Handwashing facilities
connected to a piped water network,
or with manual refilling

GIZ Fit for School > WASHaLOT 3.0

Connected to a piped water network or storage tank, or 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 cm HDPE-pipe with adjustable height and a capacity of 28 litres, 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	++	
	Number of users washing hands at the same time	Type of tap/outlet	Reduced hand contamination	+	
			Contactless tap/outlet		
			1		
			2–4	+	
	Accessibility	Number of users washing hands at the same time	5–10	+	
			> 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	+	
			Prefabricated: produced centrally	++	
	Installation	Production: type of materials and location	Prefabricated: imported	+	
			Time	> 3 days	
			1–3 day	+	
O&M	Installation	< 1 day			
		Skills	Advanced		
		Costs	Basic		
Durability and expected timespan	O&M	High costs			
		Low costs	++		
		Time	Daily		
Risk of vandalism and theft	Durability and expected timespan	Weekly	+		
		> Weekly			
		Skills	Advanced		
ADDITIONAL SPECIFICATIONS	Risk of vandalism and theft	Basic	++		
		High costs			
		Low costs	++		
Durability and expected timespan	ADDITIONAL SPECIFICATIONS	5–10 years			
		2–5 years	+		
		1–2 years			
		< 1 year			
Risk of vandalism and theft	Durability and expected timespan	High risk			
		Low risk	+		

Oxfam

> Foot-operated handwashing facility in camps

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

Permanent or semi-mobile facility with multiple taps/outlets

EMERGENCY: ✓



Photo source: Moury Rahman/Oxfam

The locally made handwashing systems 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.

Oxfam Bangladesh / UNCHR
Individual handwashing facility
Developed by Oxfam Bangladesh
<https://bit.ly/3LdwamT>



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	
		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			

Oxfam Foot-operated handwashing facility in camps

WaterAid > Foot-operated handwashing facility for 4 users (draft)

Connected to a piped water network or storage tank, or 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 4.9m which allows one meter of physical distance. Pandemic adjustments could include hand free operated taps to lower the risk of infectious disease spreading.

The system is suitable for various locations such as community centers, healthcare 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.

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

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

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

General description
A water tank with pipe connects to multiple handwashing stations.

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

WaterAid Pakistan
Description
This facility includes two main steel frames, one in the front for the water tank and the other one for the sinks. The water tank is made of galvanized iron sheet with soap dispensers. These frames are welded together. Pipes are then installed 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.

General design features
The metal frames for sinks and the water tank are fabricated from square pipes (25 x 25mm). The tank stand is 4.9 meters long and 500mm wide, which allows for a one meter physical distance.

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

Disadvantages
• Needs periodic O&M.
• Not hands-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	+
	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		
	Installation *	Time	On-site assembly	++
			Prefabricated: produced locally	++
			Prefabricated: produced centrally	
Prefabricated: imported				
O&M *	Time	1 – 3 day		
		< 1 day		
		Advanced		
	Skills	High costs		
		Low costs		
Durability and expected timespan *	Time	Daily		
		Weekly		
		> Weekly		
	Skills	Basic		
		High costs		
		Low costs		
Risk of vandalism and theft *	Time	5 – 10 years		
		2 – 5 years		
		1 – 2 years		
		< 1 year		
ADDITIONAL SPECIFICATIONS		High risk		
		Low risk		

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) and 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 is 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 1-2 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 healthcare facilities.

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

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



Photos source: WaterAid

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

Connected to a storage tank, or manual refilling

Mobile facility with integrated greywater tank

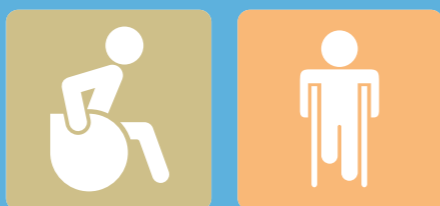
EMERGENCY: ✓

		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		
			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		
			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					

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) and sent it to info@susana.org

WaterAid > Handwashing facility for children with disabilities (draft)



This mobile, welded square-tube construction is designed for children with physical disabilities. 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 children 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 handwashing station is designed for people with disabilities. The mobility of the construction allows application in various places. It can be used in community centers, healthcare facilities, quarantine centers, schools, government offices, religious centers and public places

The maintenance of the simple construction is easy, and the mobility allows

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

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



Connected to a storage tank, or 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	
		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 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) and sent it to info@susana.org

3.

Handwashing facilities
with manual refilling

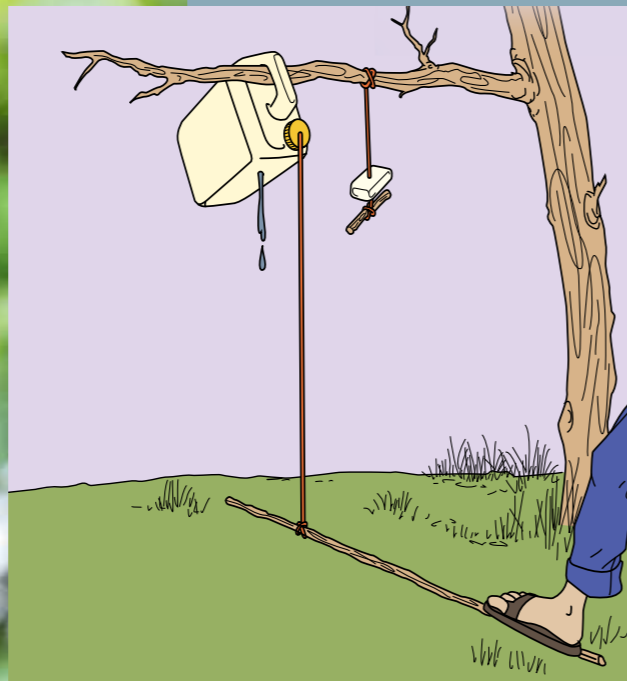


Photo left source: GIZ, Photo right source: CDC U.S. Department of Health and Human Services

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 'How to build a tippy tap'
www.youtube.com/watch?v=bW32lc9G1Sc
 > World Vision USA: '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	
	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			
	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) and sent it to info@susana.org

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. 1-4 taps can be installed.

The system has an integrated water storage. The water tank capacity is flexible from 25 to 250 l. 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		
	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			
		Production: type of materials and location		Standard: 500 – 1000 ml	
				Water-saving: 250 – 500 ml	
	Water-saving: 30 – 50 ml				
	Water-recycling: 5 ml				
	Installation *	Time	On-site production		
			On-site assembly		
			Prefabricated: produced locally	++	
			Prefabricated: produced centrally		
	Installation *	Time	Prefabricated: imported		
			> 3 days		
1 – 3 day					
< 1 day					
O&M *	Time	Advanced			
		Basic			
		High costs			
		Low costs			
O&M *	Time	Daily			
		Weekly			
		> Weekly			
		Advanced			
O&M *	Time	Basic			
		High costs			
		Low costs			
		5 – 10 years			
Durability and expected timespan *		2 – 5 years			
		1 – 2 years			
		< 1 year			
		High risk			
Risk of vandalism and theft *		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) and sent it to info@susana.org

ARUP > Handwashing in emergencies (draft)

Container with manual refilling

Mobile facility with integrated wastewater collection tank

EMERGENCY: ✓

Photos source: ARUP



The ARUP handwashing station is a single-use design.

A jerry can filled with water is placed underneath and the water is pumped up with a foot pump to the tap.

For wastewater collection an empty jerry can is used. For the disposal the can is simply emptied into a soak pit. A soap dispenser is included next to the tap.

Pandemic response.*

The design is suitable for refugee camps.

The system has different height options including sizes for children. It is a robust construction that is stackable and flexible for positioning.

Individual handwashing facility
Developed by ARUP
<https://jengu.org.uk>

	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				

ARUP Handwashing in emergencies

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

Oxfam > Jerry bucket (draft)

Container with manual refilling

Mobile facility without drainage or with soil infiltration

EMERGENCY: ✓

A 14litre bucket with a lid is fitted with a tap and placed on a stand. The system works rather well if used by 1 to 10 people per day.

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

The water availability relies on regular manual refilling.

The tap quality and design determines the water use efficiency. 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, restaurants and other public spaces.

The system is simple and low in cost. It is locally available and commonly used.

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

Photo source: Jane Beesley/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	+
		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	Time	Prefabricated: produced locally	
			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	Time	Low costs	++	
		Daily	+	
		Weekly		
Risk of vandalism and theft	Skills	> Weekly		
		Advanced		
		Basic	++	
ADDITIONAL SPECIFICATIONS		High costs	+	
		Low costs		
		5 – 10 years		
	Durability and expected timespan	2 – 5 years		
		1 – 2 years		
		< 1 year	+	
	Risk of vandalism and theft	High risk	+	
		Low risk		

Oxfam Jerry bucket

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



Photo sources: Oxfam

The Oxfam Handwashing Station (OHS) is a four tap handwashing system, but serves two 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 30-100ml 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 GBP£60 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

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

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 for one person
Developed by PATH Devices and Tools Global Program
<https://bit.ly/367x0CB>



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		
	Installation	Time *	> 3 days	
			1 – 3 day	
			< 1 day	
		Skills *	Advanced	
Basic				
Costs				
O&M *	Time	High costs	++	
		Low costs		
		Daily		
	Skills	Weekly		
		> Weekly		
		Advanced		
	Costs	Basic		
		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) and 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 for one person
Developed by PSI
<https://bit.ly/3qdVXqU>

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	++
		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		
	2 – 5 years			
	1 – 2 years			
	< 1 year			
Risk of vandalism and theft *	High risk			
	Low risk			
ADDITIONAL SPECIFICATIONS				

PSI One person handwashing facility

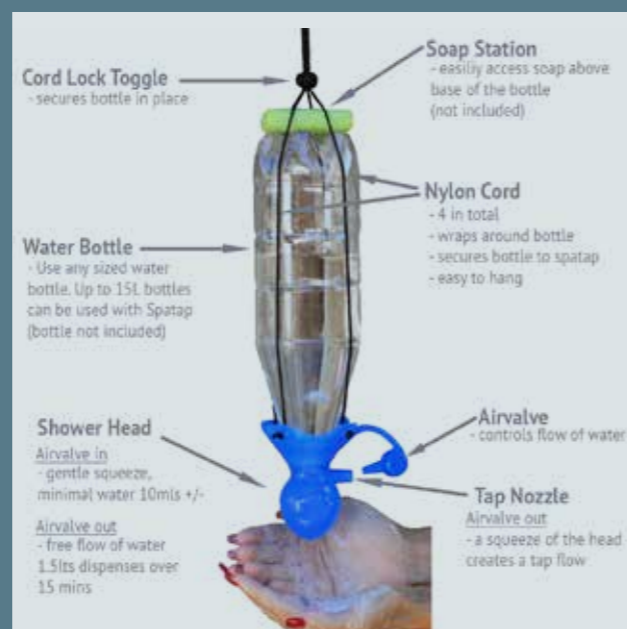
*If you have field experience with the system, feel free to add to the ranking (Use the PDF comment function: "+" partially well, "++" rather well) and sent it to info@susana.org

Spatap > Portable tap (draft)

Container with manual refilling

Mobile facility without drainage or with soil infiltration; fits various PET bottles

EMERGENCY: ✓



The Spatap is suitable for a number of PET bottles (1 to 20 Litres). It can be hung on a tree or other support structure.

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

The special tap attached to the upside down hanging bottle can be used with the spatap as a drop tap or squeeze tap. As an alternative to the tap a water bottle can be hung up without a lit or a lit that is used as a tap. A bar of soap can be attached on top of the water bottle.

The wastewater usually drains through the soil.

The Spatap is suitable for single household or schools.

The product is simple and affordable. And can be built using basic locally available materials. It is not durable and while washing hands the feet might get wet.

Individual handwashing facility for one person
Developed by SPATAP
<https://spatap.com/shop>

Photo source: Spatap

	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	
			Water-recycling: 5 ml	
	Production: type of materials and location		On-site production	
			On-site assembly	++
			Prefabricated: produced locally	
			Prefabricated: produced centrally	
	Installation	Time	Prefabricated: imported	++
> 3 days				
1 – 3 day				
Skills			< 1 day	++
			Advanced	
			Basic	++
Costs			High costs	
			Low costs	+
O&M		Time	Daily	++
			Weekly	
	> Weekly			
Skills		Advanced		
		Basic	++	
		High costs		
Costs		Low costs	++	
		Durability and expected timespan *	5 – 10 years	
Durability and expected timespan *		2 – 5 years		
		1 – 2 years		
		< 1 year		
		Risk of vandalism and theft *	High risk	
Risk of vandalism and theft *		Low risk		
		ADDITIONAL SPECIFICATIONS		

Spatap Portable tap

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

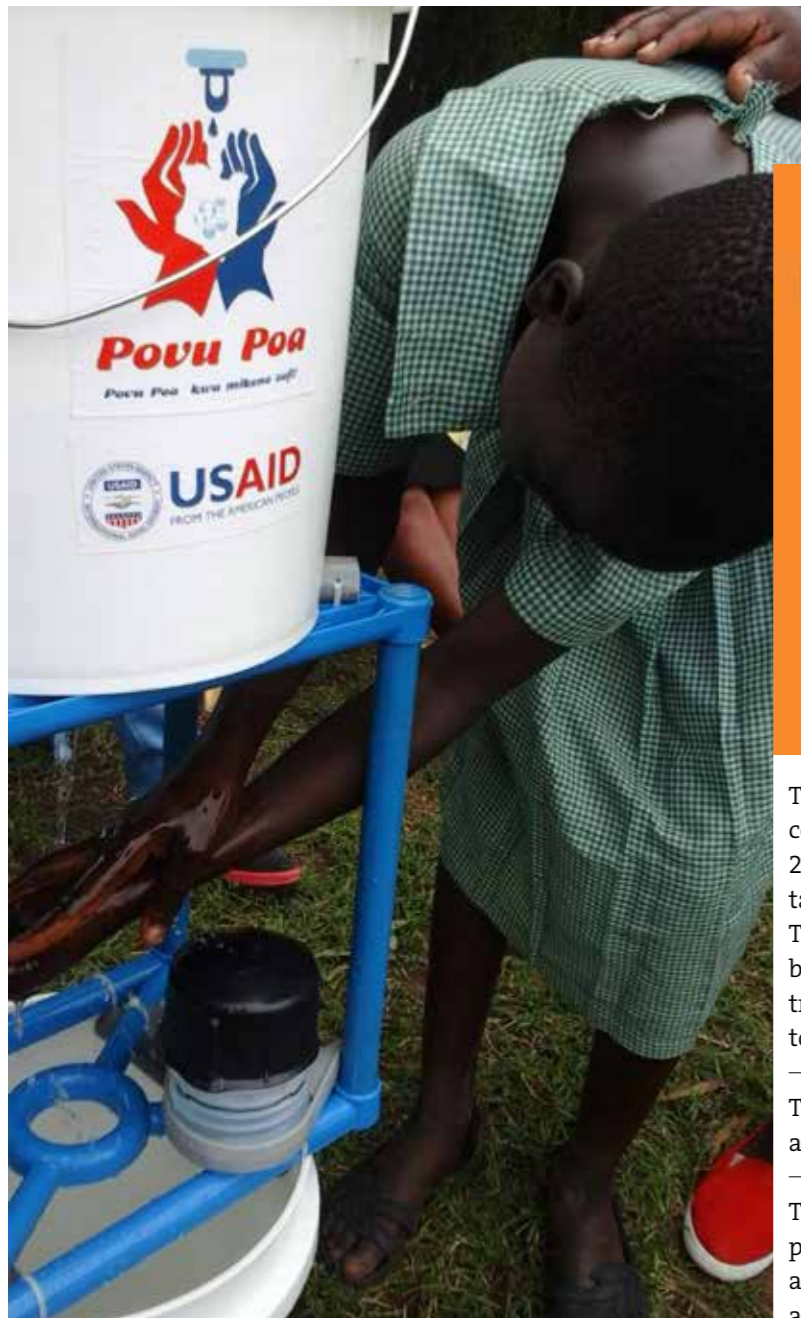


Photo sources: USAID

The Povu Poa is available in bucket and pipe configurations. The bucket model (A) has two 20-litre buckets, one supply bucket with a single tap and one waste bucket, connected vertically. The pipe model (B) has a 5-litre 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 for one person
 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
<https://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	
Low costs			++	
Durability and expected timespan	Time	Daily	+	
		Weekly		
		> Weekly		
Risk of vandalism and theft		Skills		
		Advanced		
		Basic	++	
ADDITIONAL SPECIFICATIONS		High costs		
		Low costs	++	
		5 – 10 years		
Durability and expected timespan		2 – 5 years		
		1 – 2 years	+	
		< 1 year	+	
Risk of vandalism and theft		High risk	+	
		Low risk		

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) and sent it to info@susana.org

WaterSHED > Happy Tap or LaBobo

Container with manual refilling

Mobile facility without drainage or with soil infiltration

LA BOBO or Happy Tap is a mass-produced plastic handwashing station.

The water availability relies on the effort of manual refilling. A tray fetches the used water. It can be collected into an external container. The wastewater needs to be disposed of into a functional grey-water management system or through soil infiltration. Since the volumes are small, water is often discharged into the environment.

The water outlet is a water-saving spout (spraying water from multiple nozzles). The water use per handwashing event is low (15 L for 50 to 70 uses). The system includes a soap tray.

The design is currently available in Southeast Asia and South Asia. It is designed for rural markets. Further it can be used in households, schools and health clinics.

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

Individual handwashing facility for one person

Developed by WaterSHED

www.happytap.net

6 proper steps of Handwashing with soap with LABOBO:
<https://www.youtube.com/watch?v=f0Fd2Mq8mLM>



Photo source: 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	++	
			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	
Costs		Basic	++		
		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					

4.

Handwashing facilities with water recycling



Photos source: Eawag



The Blue diversion autarky system recycles handwashing water using a simplified mem-brane 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>



Eawag > The Blue Diversion Autarky (draft)

Water recycling

Permanent facility

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
	Skills	1 – 3 day	
< 1 day			
Advanced		+	
Costs	Basic		
	High costs	++	
O&M	Low costs		
	Time	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			

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) and 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 80l 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 5ml 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 Facility (draft)

Water recycling

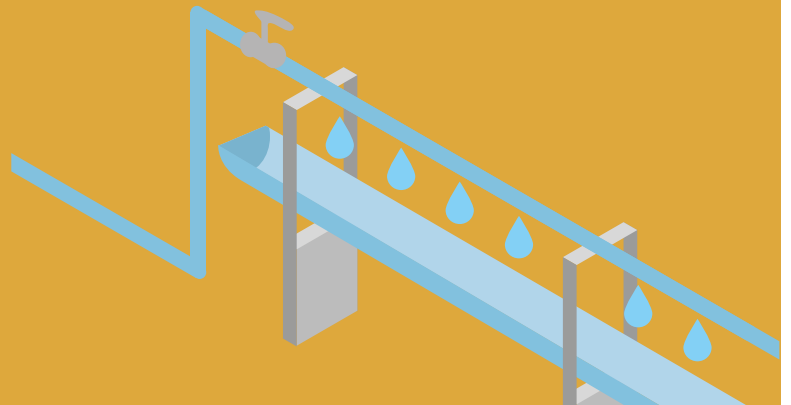
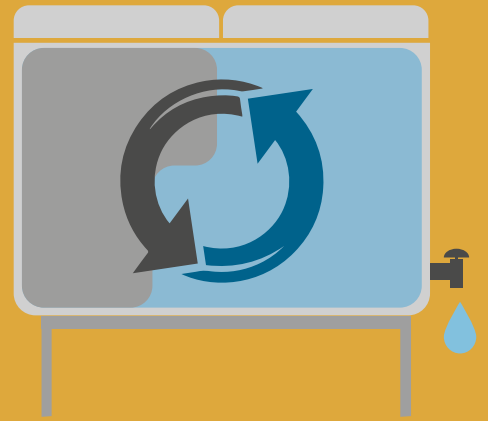
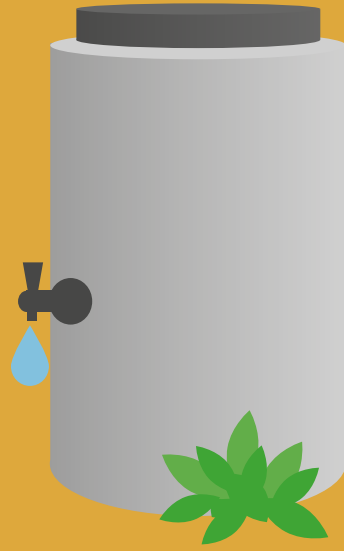
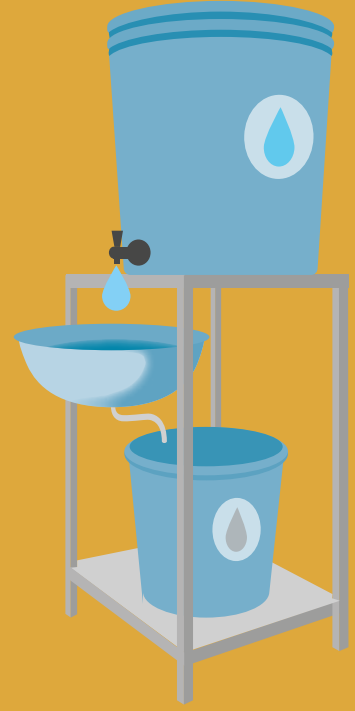
Mobile facility

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
	Number of users washing hands at the same time	Reduced hand contamination	
		Contactless tap/outlet	
		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) and sent it to info@susana.org



<https://bit.ly/3s1IuQ0>
on SuSanA.org