



Lao PDR Group Handwashing Facilities

Low, Medium and High Cost Solutions



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Dear Reader

Daily hygiene group activities in schools are a simple, cost-effective way to promote a healthy life and good education for kids. Several solutions have been created in schools to provide facilities that can be used by a group of students at the same time. This catalogue provides an overview of facilities in primary schools in Vientiane, Lao PDR.

Different schools need different solutions, depending on population size, accessibility of water, the size of the compound and of course the available resources. To serve students for a long time, group washing facilities should take a number of aspects into consideration which are presented on page 4.

Key Facts // Group Washing Facilities

Child Perspective //

Students are the users of the facility. They have to like it! The dimensions of the facility should be appropriate for students to use and to clean. If a bucket needs to be refilled manually, students must be able to do it. Colorful facilities will motivate the students to use it and to sustain the functionality. Most important for children is to learn from a peer. Face to Face facilities will promote this.

Community Involvement //

Community involvement is the key for a sustainable facility. Minor repairs and maintenance is required for all kind of hardware infrastructure, also for group washing facilities. The school community is a great source of resources to build, enhance and sustain facilities. Engage stakeholders in the community from the very beginning to discuss what kind of facility fits best in the surrounding and to clarify roles and responsibilities.

Location //

The facility should be located near the classroom and it should not disturb other activities. This will save time and the group activities can be included easily in the daily schedule.

Number of Facilities/Outlets //

The more children can use the facility at the same time the better. This saves time when conducting the activities. Try to build enough facilities to cover at least 50% of your students. The more the better!

Height //

The height should be child friendly! About 80 cm for the pipe or bottle and 50 cm for the basin, if you plan to have a basin.

Holes //

-30 cm-

Use a punched pipe (metal or plastic) instead of faucets. The holes should be at the lowest part of the pipe (not at the side) and they only need to be 1.5 mm! The distance between two holes/outlets should be 30cm.

Manually Refillable Water Source //

Many schools don't have reliable access to piped water. For those schools a self-contained bucket system is a good solution. Even if you already have water access it is recommended to have a manually refillable water bucket. This assures the facility can be used even if there is no running water.

Drainage //

Ø 1.5 mm

Lower quantity of water also makes the disposal easier. Make sure there is proper drainage! In case you don't use a basin a flower bed can be created under the facility. If you use a basin build a gravel bed around the drainage pipe.

This facility catalogue showcases the key features of Schools are the heart of a community where children spend half of their day. They play a unique role in various group handwashing facilities constructed throughout Lao PDR and how these address practical creating healthy learning environments. The social norms and habits developed in children will stay with issues with respect to the design, functionality, and them all their lives. Thus, by providing a healthy learndurability of these facilities in schools. Its purpose is to ing environment and promoting healthy practices, allow readers to carefully consider these features when schools act as an equalizer for all children from varied constructing group washing facilities in schools and benefit from this fund of experience. economic backgrounds.

The Fit for School program is a Water, Sanitation and Hygiene in Schools (WinS) program of the Ministry of Education and Sports of Lao PDR, supported by the Southeast Asian Ministers of Education Organization Regional Center for Educational Innovation and Technology (SEAMEO INNOTECH) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. The Fit for School program interventions are simple and evidence-based: daily supervised group handwashing with soap, daily supervised group toothbrushing with fluoride toothpaste and bi-annual deworming. The Fit for School approach is based on four principles: simple, scalable, sustainable and systems thinking. It promotes a step-wise approach in transforming schools into healthy learning environments where skills-based hygiene practices are part of the daily school routines to form long-term habits.

The Ministry of Education and Sports of Lao PDR is scaling up the program across the country. All provinces have started to establish model schools to showcase the approach in their province and function as learning centers for other schools. Furthermore, many more schools have built group handwashing facilities with their own budget, the help of their community or through support by external organizations.

80 cm

50 cm

.....

While financial resources may be limited, small and simple solutions can be adapted for building functional, low cost facilities or for improving existing group washing facilities. As schools throughout Southeast Asia have demonstrated, small measures can have big impacts. Over time or with adequate support, schools can move on to facilities that require more investments.

Join us in exploring the different possibilities! The following pages will show you group handwashing facilities in detail including their design, materials, cost and key features. They showcase options, starting from inexpensive versions to mid-range solutions and some more costly examples from different schools in Lao PDR. The first step to a more hygienic and healthy school environment does not require a lot of money.





Getting started

By using locally available materials, costs for functional handwashing facilities that accommodate larger groups of students can be kept low. It can be as simple as using plastic bottles. These simple yet effective designs focus on children's needs and address hygiene practices. Even the most basic forms can still make a big impact on the health of students in the school.

The following examples are low-cost solutions that effectively engage students in daily handwashing and toothbrushing practices, constructed from available materials and easy to maintain.

Arkad Primary School // Sikhottabong District, Vientiane Capital



Installation	easy 🙂
Durability of material	low 😕
Manually refillable water supply	yes 🙂
Cost efficiency	high 😶
Facts // School and Group Washing Faciliti	ies
Number of facilities	5
Water source Piped wate	er with low pressure
Material costs (all facilities in school)	LAK 80.000
Labor costs	-
Additional costs for a roof (material & labor)	-
Facility costs per outlet	LAK 4.000
Facts // 1 Group Washing Facility	
Number of outlets per facility	33
Number of students per facility	33
Material costs per facility	LAK 16.000
Labor costs per facility	_

Best for schools with:

- Limited resources
- → Low water pressure
- → No water access yet

Community involvement:

→ Labor

Design features:

- → Peer learning
- → Distance between
- the outlets: 30 cm
- → Wooden frame

Materials:

- → Water bottles
 → Wood or bamboo
- → Rope or string

Operation & maintenance:

 → Conservation and replacement of bottles
 → Cleaning of bottles



162 students attend the school

They can use the facilities in **1 round**

Students can bring water from their homes to do the group activity at school.



Donevangpho Primary School // Mayparkngum District, Vientiane Capital

Installation easy 💽 middle 😐 Durability of material no 💌 Manually refillable water supply high 😶 Cost efficiency Facts // School and Group Washing Facilities 5 Number of facilities Borehole + electric pum Water source LAK 1.600.000 Material costs (all facilities in school) Labor costs LAK 600.000 Additional costs for a roof LAK 150.000 (material & labor) Facility costs per outlet LAK 18.333 Facts // 1 Group Washing Facility Number of outlets per facility 24 48 Planned number of students per facility Material costs per facility LAK 320.000 LAK 120.000 Labor costs per facility

Best for schools with:

→ Limited resources

Community involvement:

- → Fund raising
- → Labor

Design features:

- → Punched pipe
- → Face to face peer learning
- → Distance between the outlets: 30 cm
- → PVC pipe (ø 35 mm) filled with cement to use as column

Materials: Ope

→ PVC pipe
→ Bamboo

Operation & maintenance:

- → Conservation and
- replacement of PVC pipe
- → Caring for flower bed
- \rightarrow Maintain and repair
- electric pump





Kengmor Primary School // Sangthong District, Vientiane Capital



Installation	difficult 😕
Durability of material	middle 😐
Manually refillable water supply	no ;
Cost efficiency	middle 😐
Facts // School and Group Washing Fac	ilities
Number of facilities	2
Water source	Borehole + electric pump
Material costs (all facilities in school) LAK 2.865.000
Labor costs	LAK 1.200.000
Additional costs for a roof (material & labor)	LAK 500.000
Facility costs per outlet	LAK 25.500
Facts // 1 Group Washing Facility	
Number of outlets per facility	80
Planned number of students per facili	ty 160
Material costs per facility	LAK 1.432.500
Labor costs per facility	LAK 600.000

Best for schools with:

- Limited resources
- → High water pressure

Community involvement:

- → Fund raising
- → Labor

Design features:

- → Punched pipe
 → Face to face peer learning
- → Distance between the outlets: 30 cm
- → Wooden frame

Materials:

- → PVC pipe → Wood
- → Iron sheet
- Cleaning of basin

Conservation and

replacement of

Operation & maintenance:

PVC pipe and iron sheet

- → Drainage system
- → Maintain and repair
- water pump





With financial support from the school community, durable and effective facilities can be constructed from materials and tools that are available in the local market.





Getting started

The ideal functional handwashing facility is userfriendly, adequate for groups of students at the same time, easy to maintain, affordable and long-lasting. Solutions for durable group facilities can come in different forms and shapes, using construction and plumbing materials that are available in local markets in order to ensure that they can be easily repaired. While they require some initial investment, the costs are usually not too high and can be funded out of school budgets and community contributions.

The following examples show some mid-cost group handwashing facilities that have been installed in various schools. These allow groups of children to wash their hands and brush their teeth at the same time and can last from 2 to 5 years.

Dongsavath Primary School // Sisattanak District, Vientiane Capital





Best for schools with:

- Only limited resources
- → No water access yet
- → Low water pressure
- → Irregular water supply

Community involvement:

- → Fund raising
- → Labor

Design features:

- → Punched pipe
 → Face to face
 peer learning
- → Distance between the outlets: 30 cm
- → Possibility to refill the bucket with
- water manually

Materials:

- → Wood → PVC pipe
 - → Cleaning of basin
 - → Drainage system

of bucket

Operation & maintenance:

→ Refilling and cleaning

→ Clean and repair water tank



163 students attend the school They can use the facilities in 2 rounds

Parkthep Primary School // Sangthong District, Vientiane Capital



Best for schools with:

- → Medium resources
- → High water pressure

Community involvement:

- → Fund raising
- → Labor

Design features:

- → Punched pipe
 → Face to face
- peer learning
- → Distance between the outlets: 30 cm
- : the outle

een additional costs cm → PVC pipe

→ Bamboo roof

(community do-

nation with no

Materials:

→ Wood

Operation & maintenance:

- → Cleaning of basin
- → Drainage system
- Conservation and
- replacement of wood





difficult 💽 Installation high 😶 Durability of material 10 no 💌 Manually refillable water supply -yes 😶 Cost efficiency Facts // School and Group Washing Facilities 因因 3 Number of facilities 7 비민민 FIT Pipe water system Water source EU LAK 4.423.00 Material costs (all facilities in school) Labor costs LAK 900.000 Additional costs for a roof -(material & labor) Facility costs per outlet LAK 76.000 Facts // 1 Group Washing Facility The facility is located in front of the school building Number of outlets per facility 23 under the existing roof. It consists of punched PVC pipes, basin and an iron frame, using an electric 46 Planned number of students per facility pump for water from a water tank. Waste water is Material costs per facility LAK 1.474.000 directly drained into a canal system. LAK 300.000 Labor costs per facility

Best for schools with:

- → Medium resources
- → High water pressure

Community involvement:

- → Fund raising
- → Labor

Design features:

- → Punched pipe
 → Face to face
 peer learning
- → Distance between the outlets: 30 cm

Arkad Primary School // Sikhottabong District, Vientiane Capital

Materials:

→ Wood → Iron frame

Operation & maintenance:

- → Cleaning of basin
- → Drainage system
- → Clean and repair water tank





They can use the facilities in **2 rounds**

Thapalanxay Primary School // Sisattanak District, Vientiane Capital



Materials:

→ PVC pipe

→ Iron frame

Installation	difficult 😕
Durability of material	high 🙂
Manually refillable water supply	no 😕
Cost efficiency	yes 😶
Facts // School and Group Washing Facili	ties
Number of facilities	1
Water source	Pipe water system
Material costs (all facilities in school)	LAK 4.147.00
Labor costs	LAK 1.500.000
Additional costs for a roof (material & labor)	-
Facility costs per outlet	LAK 99.000
Facts // 1 Group Washing Facility	
Number of outlets per facility	57
Planned number of students per facility	114
Material costs per facility	LAK 4.147.000
Labor costs per facility	LAK 1.500.000

Best for schools with:

- → Medium resources
- → High water pressure

Community involvement:

- → Fund raising
- → Labor

Design features:

- → Punched pipe
 → Face to face
 peer learning
- → Distance between the outlets: 30 cm

Operation & maintenance:

- → Cleaning of basin
- → Drainage system
- Maintenance and
- replacement of PVC pipes





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Houaykham Primary School // Sangthong District, Vientiane Capital



Installation	middle 😐
Durability of material	high 🙂
Manually refillable water supply	yes 🙂
Cost efficiency	high 🙂
Facts // School and Group Washing Fac	ilities
Number of facilities	5
Water source	Piped water + container
Material costs (all facilities in school)	LAK 4.785.000
Material costs (all facilities in school) Labor costs	LAK 4.785.000 LAK 500.000
Material costs (all facilities in school) Labor costs Additional costs for a roof (material & labor)	LAK 4.785.000 LAK 500.000 -
Material costs (all facilities in school) Labor costs Additional costs for a roof (material & labor) Facility costs per outlet	LAK 4.785.000 LAK 500.000 - LAK 96.000
Material costs (all facilities in school) Labor costs Additional costs for a roof (material & labor) Facility costs per outlet Facts // 1 Group Washing Facility	LAK 4.785.000 LAK 500.000 - LAK 96.000
Material costs (all facilities in school) Labor costs Additional costs for a roof (material & labor) Facility costs per outlet Facts // 1 Group Washing Facility Number of outlets per facility	LAK 4.785.000 LAK 500.000 - LAK 96.000 11
Material costs (all facilities in school) Labor costs Additional costs for a roof (material & labor) Facility costs per outlet Facts // 1 Group Washing Facility Number of outlets per facility Planned number of students per facility	LAK 4.785.000 LAK 500.000 - LAK 96.000 11 y 22
Material costs (all facilities in school) Labor costs Additional costs for a roof (material & labor) Facility costs per outlet Facts // 1 Group Washing Facility Number of outlets per facility Planned number of students per facility Material costs per facility	LAK 4.785.000 LAK 500.000 - LAK 96.000 11 y 22 LAK 957.000

Best for schools with:

- → Medium resources
- → Irregular or no water supply
- → Low water pressure

Community involvement:

- Fund raising
- Painting facility
- → Do the installation

Materials:

- → Galvanized pipe
- Plastic bucket
- peer learning → Distance between the outlets: 30 cm

Design features:

→ Punched pipe

→ Face to face

Operation & maintenance: Cleaning of water bucket



- 3,7 m -



👤 👤 They can use the facilities in 2 rounds

> This facility was designed by Fit for School/GIZ and is used as the standard facility in many schools also in Cambodia, the Philippines and Indonesia. In Lao PDR, the Technical College in Vientiane produces and sells this facility.



Installation	easy 🙂
Durability of material	high 🙂
Manually refillable water supply no, but	possible 😐
Cost efficiency	middle 😐
Facts // School and Group Washing Facilit	ies
Number of facilities	3
Water source	1000 l water tank
Material costs (all facilities in school)	LAK 2.400.00
Labor costs	LAK 450.000
Additional costs for a roof (material & labor)	N.A.
Facility costs per outlet	LAK 79.166
Facts // 1 Group Washing Facility	
Number of outlets per facility	12
Planned number of students per facility	24
Material costs per facility	LAK 800.000
Labor costs per facility	LAK 150.000

Best for schools with:

- → Medium resources
- → Toilet/latrine block with plumbing system

Community involvement:

→ Assembly possible in 5 easy steps by teachers or community members

→ Additional roof cover

Design features:

- → Punched pipe (holes)
- ø 1.5 mm) on metal frame Attached to water pipe or to
- 15 liters individual bucket system for refilling by hand
- → Distance between the
- outlets: 35 cm

Materials:

- → PVC pipes → Iron tube
- frame

- Easy to transport and relocate
- due to preassembled system

Operation &

- maintenance:
 - → Regular cleaning of main PCV basin
 - → Careful handling
 - of valves → Regular fixing
 - of screws





Lang Khang Kindergarten // Boualapha District, Khammouane Province



Best for schools with:

- → Medium resources
- → Irregular or no water supply

Community involvement:

- → Chief of village and Youth Union
- → Labor (facilities prefabricated by company and installed by NGO & Youth Union)

Design features:

- → Punched pipe
- (holes ø 1 mm)

outlets: 30 cm

→ Height of sink

- → Face to face peer learning
- → Distance between the

fitting the children

kindergarten: 60 cm)

(primary school: 70 cm,

- → Iron frame
 - → Cable tie
 - Plastic bucket

Materials:

25 cm

1,3 cm

(60 – 80 liters)

Operation & → Big PVC pipe:

- maintenance: Cleaning of
- → Small PVC pipe: basin
 - > Drainage
 - system
 - → Repaint
 - anti-rust
 - Replace the bucket

_		70 -	60 c
_			





If funds are sufficient, group facilities can be designed and constructed in a way that puts a stronger focus on aesthetics and durability.





Getting started

Every school would like to have not only functional but also beautiful facilities. Furthermore, enhancements to existing group handwashing facilities can make practical sense. A roof to protect students from sunlight or rain, a proper drainage system that is less likely to cause regular problems and other considerations are good reasons for additional enhancements. Teachers and students also are fond of using facilities that are beautifully designed. Having nice colors, pretty tiles, neat and orderly, these features make the use of the facilities and the whole school ground more attractive.

In this category, you will find examples of the high-cost type. They are more expensive and usually only make sense if a community is able to provide substantial additional funding.

Nonsa-ath Primary School // Saythany District, Vientiane Capital



Installation	difficult 🙁
Durability of material	high 🙂
Manually refillable water supply	no ;
Cost efficiency	high 🙂
Facts // School and Group Washing Fac	cilities
Number of facilities	3
Water source	Borehole + electric pump
Material costs (all facilities in school	L) LAK 10.000.000
Labor costs	LAK 1.000.000
Additional costs for a roof (material & labor)	LAK 6.500.000
Facility costs per outlet	LAK 136.900
Facts // 1 Group Washing Facility	
Number of outlets per facility	28
Planned number of students per facil	ity 56
Material costs per facility	LAK 3.333.333
Labor costs per facility	LAK 333.333

Best for schools with:

- Enough resources
- → High water pressure

Community involvement:

- → Fund raising
- → Labor

Design features:

- → Punched pipe → Face to face
- peer learning
- → Distance between the outlets: 30 cm

→ Concrete → Wood

Materials:

→ Zinc sheets

Operation & maintenance:

- → Cleaning of basin
- → Drainage system
- Conservation and replacement of wood and zinc sheets





Nongbouathong Tai Primary School // Sikhottabong District, Vientiane Capital



Installation	difficult 🙁
Durability of material	high 😶
Manually refillable water supply	no ;
Cost efficiency	middle
Facts // School and Group Washing Facili	ties
Number of facilities	2
Water source	Pipe water system
Material costs (all facilities in school)	LAK 6.000.000
Labor costs	LAK 3.000.000
Additional costs for a concrete floor (material & labor)	LAK 6.000.000
Facility costs per outlet	LAK 180.000
Facts // 1 Group Washing Facility	
Number of outlets per facility	25
Planned number of students per facility	50
Material costs per facility	LAK 3.000.000
Labor costs per facility	LAK 1.500.000

Best for schools with:

→ Resources

Community involvement:

→ Fund raising

Design features:

- → Punched pipe
- → Face to face
- peer learning → Distance between
- the outlets: 30 cm
- → Width of basin: 40 cm (rim 10 cm each)

Materials:

→ PVC pipe → Concrete

→ Tiles

Operation & maintenance:

- → Cleaning of basin
- → Unclog drainage system



175 students attend the school



1 They can use the facilities in 2 rounds



Houayhong Primary School // Chanthabouly District, Vientiane Capital



Installation	difficult 😕
Durability of material	high 🙂
Manually refillable water supply	no ;
Cost efficiency	middle 😐
Facts // School and Group Washing Fa	icilities
Number of facilities	2
Water source	Pipe water + electric pump
Material costs (all facilities in schoo	ol) LAK 10.000.000
Labor costs	LAK 3.400.000
Additional costs for a roof (material & labor)	LAK 1.000.000
Facility costs per outlet	LAK 186.100
Facts // 1 Group Washing Facility	
Number of outlets per facility	36
Planned number of students per faci	lity 72
Material costs per facility	LAK 5.000.000
Labor costs per facility	LAK 1.700.000

Best for schools with:

→ Resources

Community involvement:

- → Fund raising
- → Labor

Design features:

- → Punched pipe
 → Face to face
- peer learning
- → Basin width: 50 cm

Materials: → PVC pipe

→ Iron frame
→ Concrete

→ Tiles

Operation & maintenance:

→ Cleaning of basin
→ Drainage system



225 students attend the school

They can use the facilities in 2 rounds





Toothbrush Holders

Store in the

Each child should have their own toothbrush.

Covers protect the toothbrush head from dirt. The covers should have little holes to prevent mold from developing.

Children should not take the toothbrushes home. They should have a second toothbrush at home for use.



Using a marker, toothbrushes must be labeled individually with the student's name or a number. As an alternative to labeling, have the children personalize their toothbrushes with a sticker or picture label for easy identification of their own toothbrush. The label can be saved from being erased over time if it is wrapped in tape. Each space and each brush should be clearly labeled to avoid mixing up toothbrushes.









The toothbrush holder should be easy to clean. It should be fixed to the wall or a similarly convenient place, so that all children can easily reach it. There should be spaces between the brushes to avoid cross-infection. The slots should be designed in a way that the head of the brush is exposed to the air and can dry after use.





Notes													



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Contact

National School Health Task Force Department of Pre-school and Primary Education, MOES (Ministry of Education and Sports) (+856 21) 91 14 94

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Vientiane Capital School Health Task Force

Pre-school and Primary Education Section, Department of Education and Sport of Vientiane Capital (+856 21) 21 31 61

→ Sangthong District Education and Sports Bureau, School Health Task Force Department of Education and Sports of Vientiane Capital (+856 21) 67 30 04

→ Parkngeum District Education and Sports Bureau, School Health Task Force Department of Education and Sports of Vientiane Capital (+856 30) 96 84 011

→ Saythany District Education and Sports Bureau,
 School Health Task Force
 Department of Education and Sports of Vientiane Capital
 (+856 21) 73 20 48

→ Sikhottabong District Education and Sports Bureau, School Health Task Force Department of Education and Sports of Vientiane Capital (+856 21) 21 33 50

→ Sisattanak District Education and Sports Bureau, School Health Task Force Department of Education and Sports of Vientiane Capital (+856 21) 31 24 54

Khammouane province School Health Task Force

Pre-school and Primary Education Section, Department of Education and Sport of Khammouane province (+856 51) 21 21 01

→ Boualapha District, School Health Task Force Please contact Khammouane province School Health Task Force for inquiries

Saravan province School Health Task Force

Pre-school and Primary Education Section, Department of Education and Sports of Saravan province (+856 34) 21 11 33

Laongam District Education and Sports Bureau, School Health Task Force Department of Education and Sports of Saravan province (+856 34) 30 00 12

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7/F PDCP Bank Centre cor. V.A. Rufino and L.P. Leviste Streets

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Philippines

www.giz.de

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For more Information on GIZ Fit for School and group washing facilities, please contact Nicole Siegmund (nicole.siegmund@giz.de)

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