

# Handwashing and Water Supply to Informal Areas

ADB TA 54227-001


Strengthening Water, Sanitation and Hygiene Practices and  
Hygiene Behavioral Change in the Pacific

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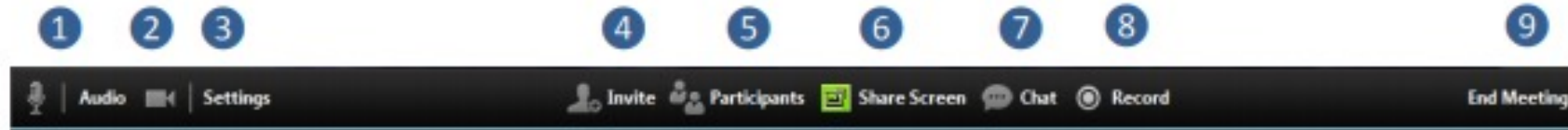
# INTRODUCTION



# Housekeeping

- Recording the session
  - Zoom controls
    - Audio controls
    - Chat (please say hello)
    - Please change your logon name
    - Raise hand
    - Please turn your video off when not speaking
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- A decorative teal geometric pattern consisting of interconnected lines forming various triangles and polygons, located in the bottom right corner of the slide.

# Zoom Controls

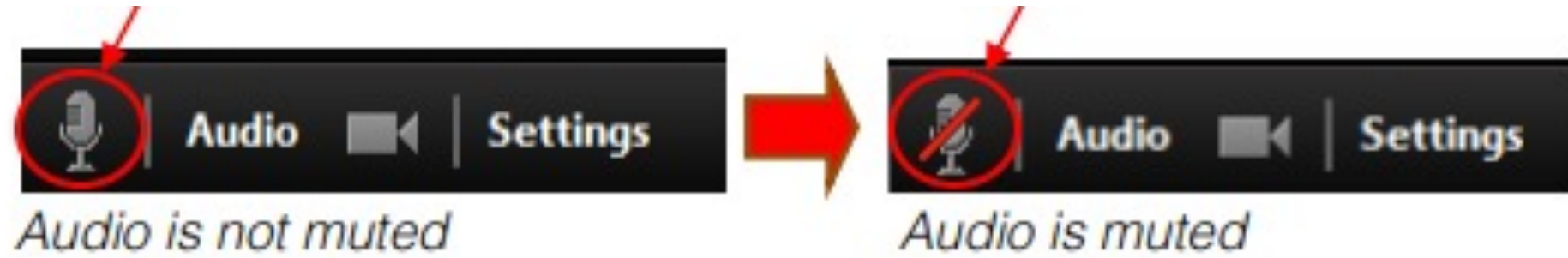


*You can:*

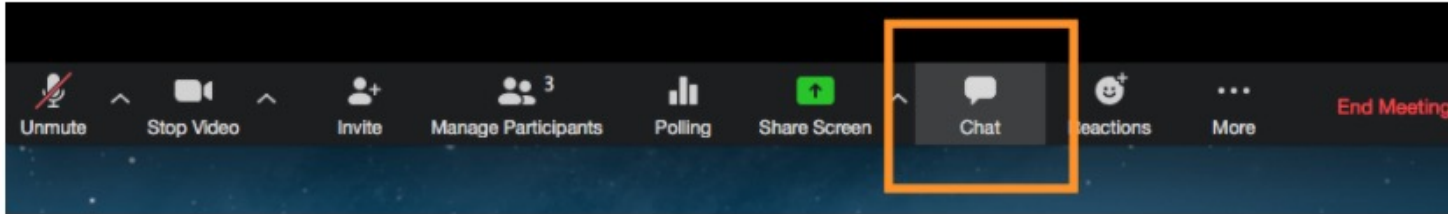
1. Mute/unmute your audio (not the audio of the participants)
2. Stop/start your video
3. Configure your settings for items such as audio and video
4. Invite more people to join by email, IM , SMS (mobile users) or meeting ID
5. View a list of participants
6. Share your desktop (everything you have open) or select a specific application to share (e.g., Microsoft PowerPoint or Excel)
7. Send a message to one person (private chat) or to all participants
8. Record the meeting (if you have been granted permission)
9. Leave or end the video meeting



# Audio



# Chat



From Edward to Everyone:

Welcome to today

From Edward to Everyone:

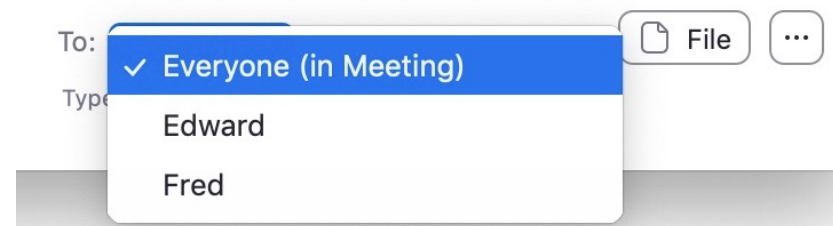
Welcome to today

From Me to Everyone:

Looking forward to today's tutorial!

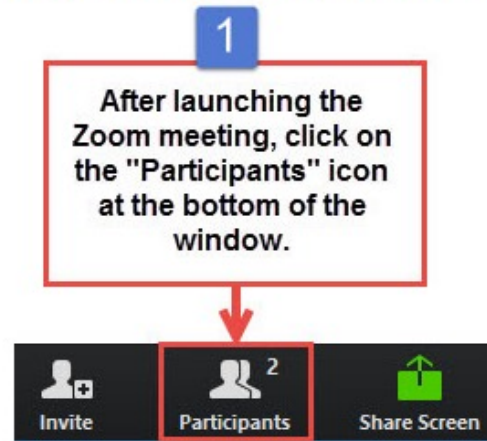
From Edward to Everyone:

How did everyone find the seminar last week?

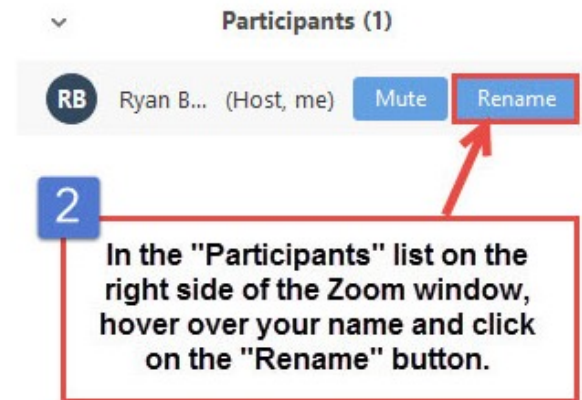


# Change Your Logon Name

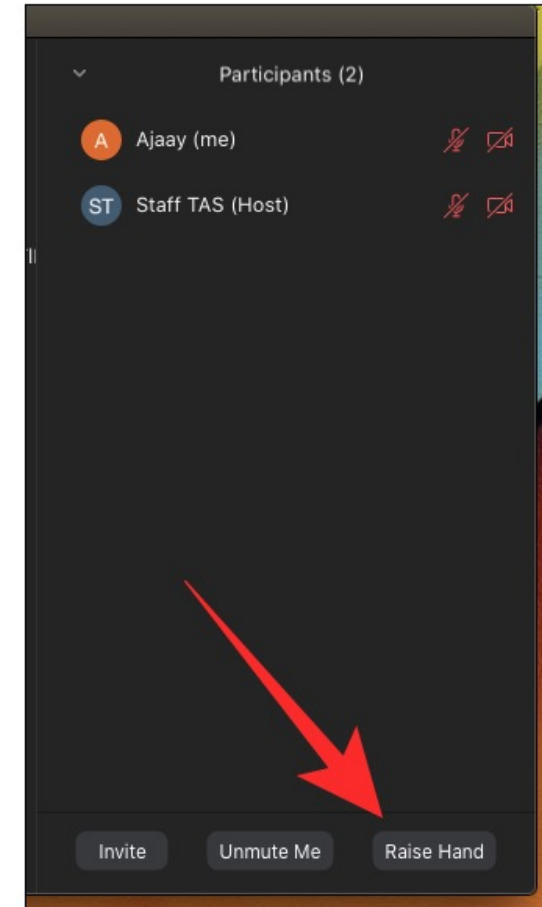
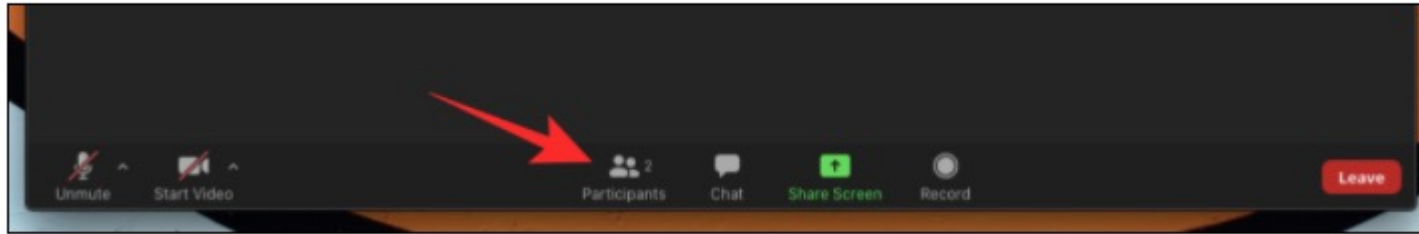
To change your name after entering a Zoom meeting, click on the **"Participants"** button at the top of the Zoom window.



Next, hover your mouse over your name in the "Participants" list on the right side of the Zoom window. Click on **"Rename"**.



# Raise Hand



# **WELCOME**


LUSIA SEFO-LEAU – CEO PWWA



# AGENDA

- Welcome } (5 Minutes)
- Introductions } (5 Minutes)
- Background – handwashing and COVID-19 (5 Minutes)
- Location and coverage } (30 Minutes)
- Design of handwashing stations } (15 Minutes)
- Barriers to implementation and strategies (10 Minutes)
- Integration with utility networks (10 Minutes)
- Supply of water to remote facilities (10 Minutes)
- Support from the TA (5 Minutes)
- Closing remarks

# OUTCOMES

- Clear understanding of the health links
  - Learn from the experience in PNG
  - Discussion of the challenges for water utilities in this area
  - Discussion on how the TA might be able to help
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- A decorative teal geometric pattern consisting of interconnected lines forming a network of triangles, located in the bottom right corner of the slide.

# **HANDWASHING AND COVID-19**

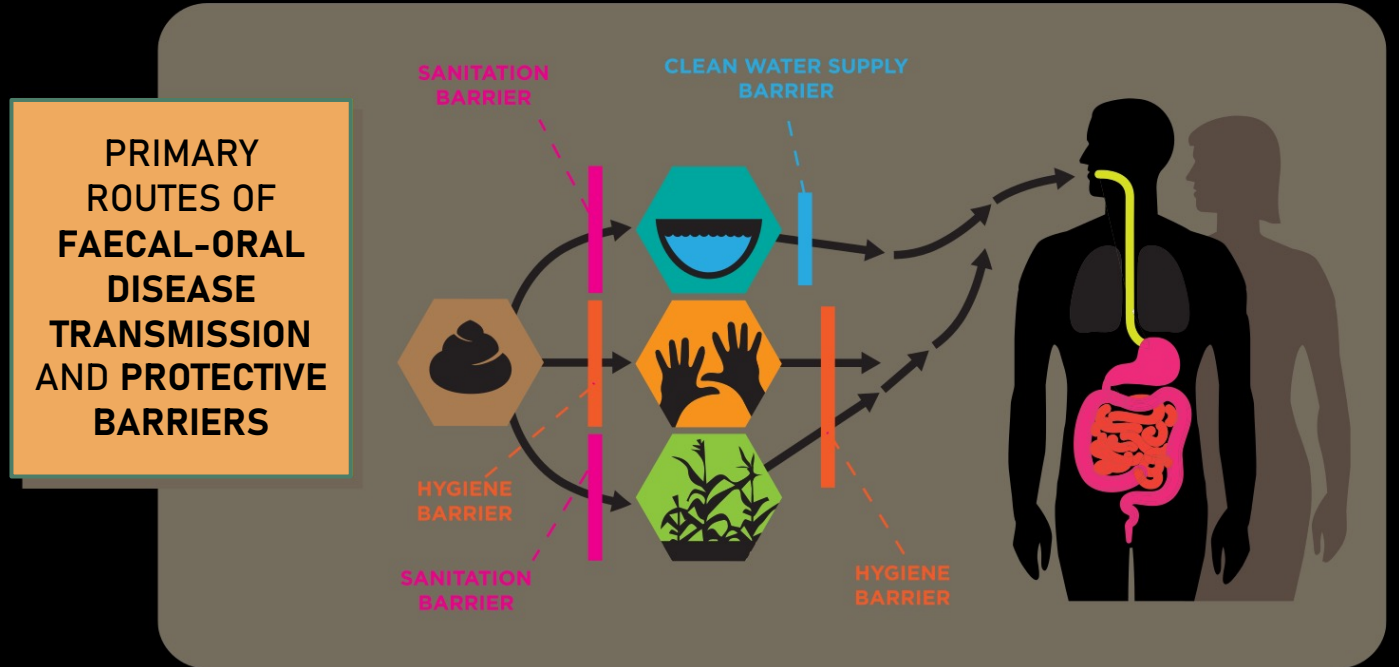
JOHN DENNIS – ENVIRONMENTAL HEALTH ADVISOR





# The Faecal-oral Route

- This exposure pathway includes most viruses, bacteria and protozoa.
- Most faecal-oral pathogens when swallowed are immediately infectious and are spread through hands, water, and food contaminated with faeces.
- Sanitation, hygiene and drinking water treatment are all barriers to transmission.





## Need Both **Soap** and **Safe Clean Water**:

- Hand washing is a standard item for the **prevention of flu and gastro-intestinal disease<sup>1</sup>**, and health officials are putting special emphasis on it now because of the **COVID-19 pandemic: (SARS-CoV-2 can be transferred to the nasal area or eyes on contaminated fingers)**.
- Soap contains **surfactants**, which are molecules that **bind to dirt on the hands and lift it away from the surface** when used with **clean water**.
- Hand sanitizers are more effective than soap at **“killing” organisms** but are **not as effective if hands are dirty**.



Photo: essentiallynatural.co.za

<sup>1</sup> Harvard Medical School, 2007  
[https://www.health.harvard.edu/newsletter\\_article/The\\_handiwork\\_of\\_good\\_health](https://www.health.harvard.edu/newsletter_article/The_handiwork_of_good_health)

**A QUESTION FOR YOU**



# Has your mandate to help with handwashing changed with COVID-19?

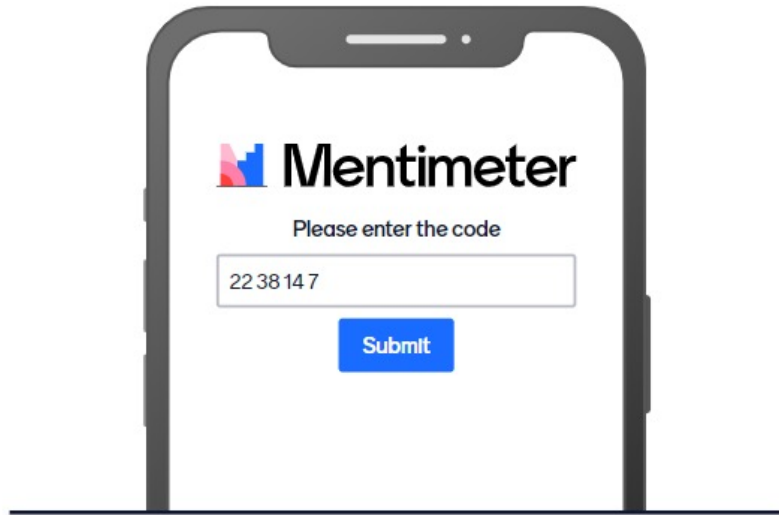
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Or use QR code

# **HANDWASHING FACILITIES**

CARLOS VASQUEZ – CHIEF OF WASH UNICEF PNG



# Carlos Vasquez

Carlos joined UNICEF HQ in 2006 as an architect with a focus on WASH in Schools.

He is currently the Chief of WASH in UNICEF PNG (three years to date) overseeing the implementation of the EU UNICEF WASH project and overseen the UNICEF WASH COVID-19 response.

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# What is the experience from the field?

- How did they go about it?
- Location and coverage?
- Design?



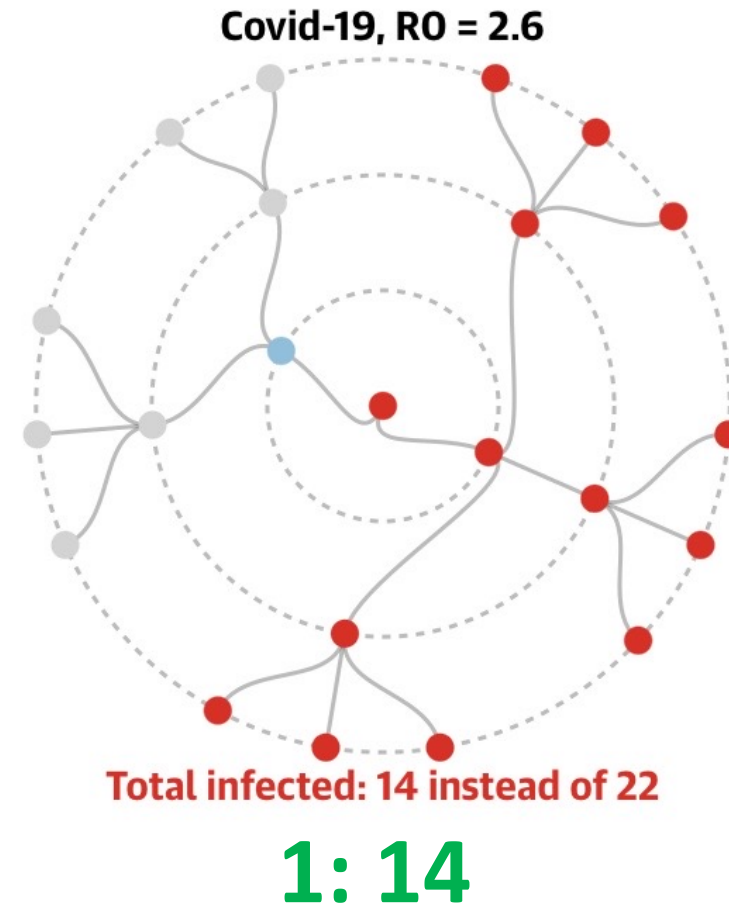
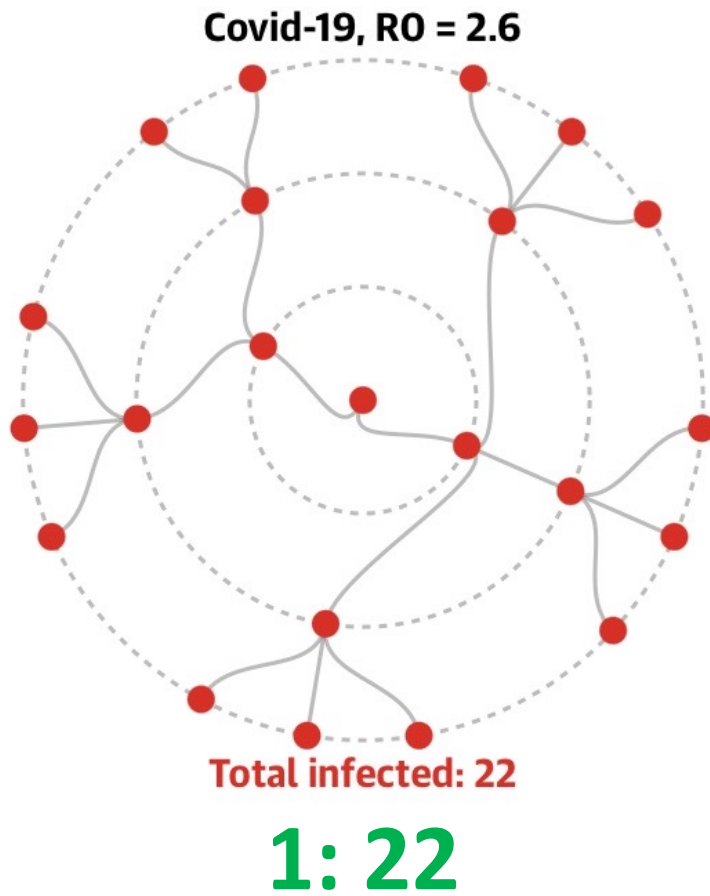


# **HANDWASHING FACILITIES**

CARLOS VASQUEZ – CHIEF OF WASH UNICEF PNG



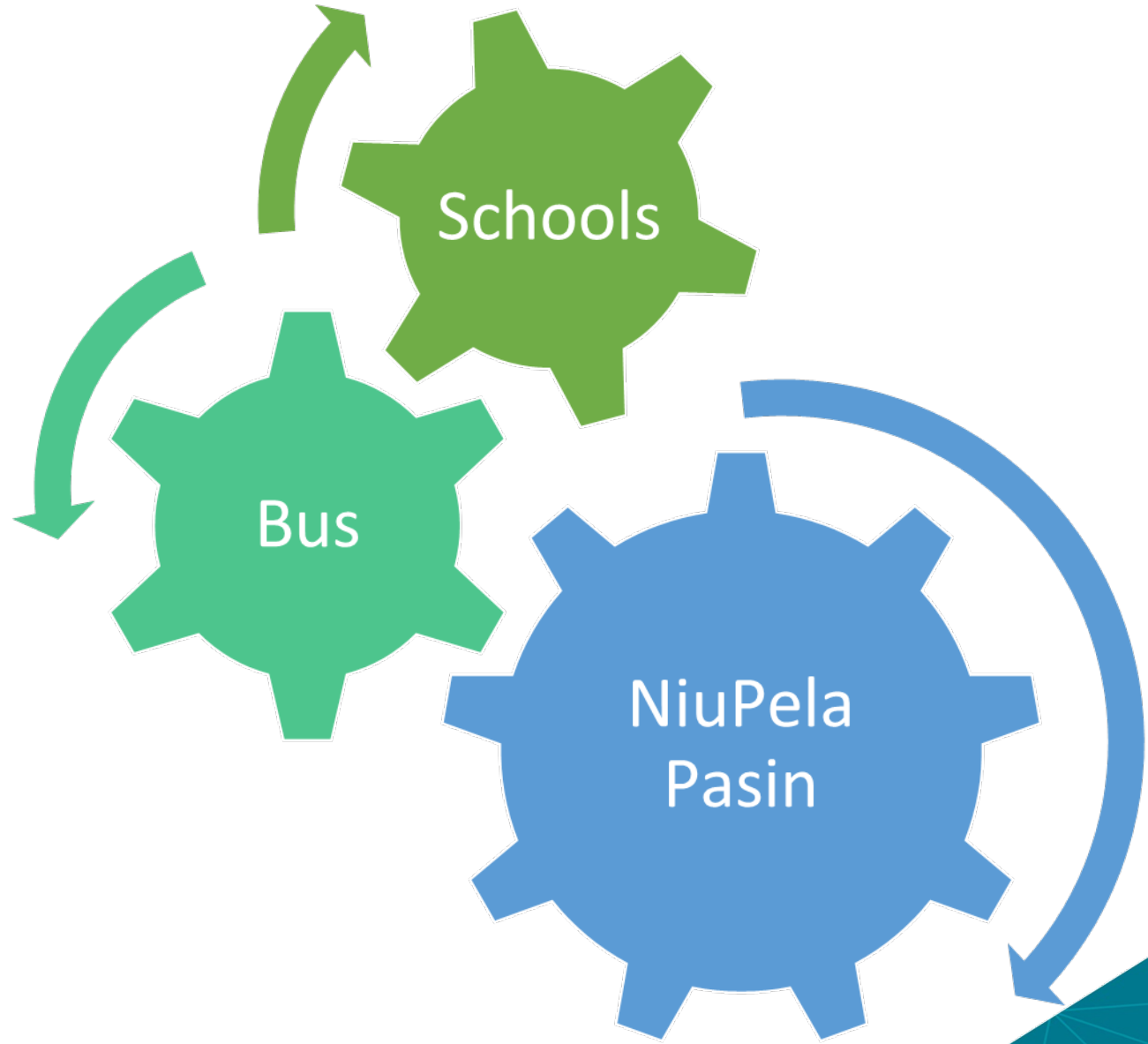
# What is the experience in the field?



Cost of Inaction

**We Were Wrong**  
And  
Were not Afraid to Fail





Scale up – from settlements to national campaigns





## 1-Taking the message to the people

- Bus hygiene campaign
- 16 routes connecting all settlements



## 2-Actual activities

- Localized Hygiene kit
- Integrate social sensitive messages
- Establish LTA for procurement
- Engage local NGO for Hygiene training





**WASH Earthquake  
response 2018**



**Crosspollination  
begins**





## Edits

- Taps too far away
- Cantilever pipe too weak
- Used as swinging bar/ taken apart

## Design Change

- Shorter pipes
- Tack welding of parts

## Programme (sustainability)

- School hygiene club
- OM integration

**TN 1**



**Form Follows Function...**

**Edit until its  
Child Centered**





Urban response



Design Built by teachers

TN 2



Community  
consultation  
and  
native ecosystem





**\$1,350**  
**\$3.5/student**  
**K12/student**



## Group Hand washing in Schools: GI Pipe Design with 4 Taps



**Overall Cost: \$800 (K2800)**

Total Student Beneficiaries: 200  
\$4 (K14)/student

### Features

- School hygiene club
- Behaviour change activities
- Construction time: 3 days
- Urban schools piped water connections
- Rural schools rain water tanks
- Waste water septic tank or pit
- Operation and Maintenance program
- Monitoring, inspections
- Handover certificates

### PROS

- Child Centered: Inclusive and Intuitive
- Low water demand
- Simple Design
- Time and cost effective
- Low O&M requiements

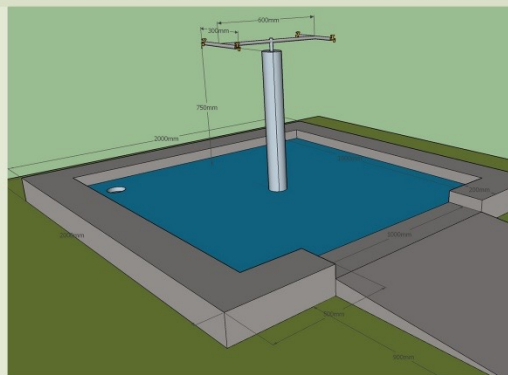
### CONS

- Used as play equipment
- Regular Cleaning
- No wash basin
- Components break under high load
- Requires water flow monitoring

### Bill of Quantity

Materials	Quantity
Cement	150 kg
Sand	300 Kg
Aggregate	540 Kg
12mm Plywood for Formwork	5.5 sqm
100mm PVC pipe	10 mtr
20mm GI Pipe	4 mtr
25mm Poly pipe	20 mtr
Gate Valve, reducer	1 each
Elbow, Tees for fittings	4 each
Brass Taps	4 Nos
<b>Human Resource</b>	
Skilled Mason	2 man days
Labour	4 man days

### 3D View



## Group Hand washing in Schools: Tuffa Basin Design 8 Taps



**Overall Cost: \$1350 (K4750)**

Total Student Beneficiaries: 400  
\$3.5 (K12)/student

### Features

- School hygiene club
- Behaviour change activities
- Construction time: 4 days
- Urban schools piped water connections
- Rural schools rain water tanks
- Waste water septic tank or pit
- Operation and Maintenance program
- Hand washing step messages
- Monitoring, inspections
- Handover certificates

### PROS

- Child Centered: Inclusive and Intuitive
- Durable
- Availability of WASH basin in market
- Time and cost effective
- Low O&M requiements

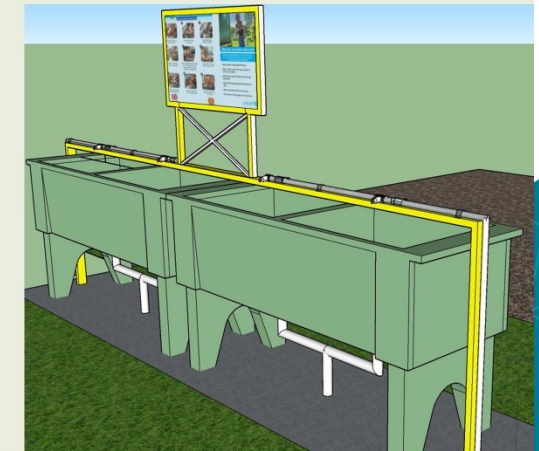
### CONS

- Requires more space
- Regular Cleaning
- Requires water flow monitoring
- Requires hard connection to waste water system

### Bill of Quantity

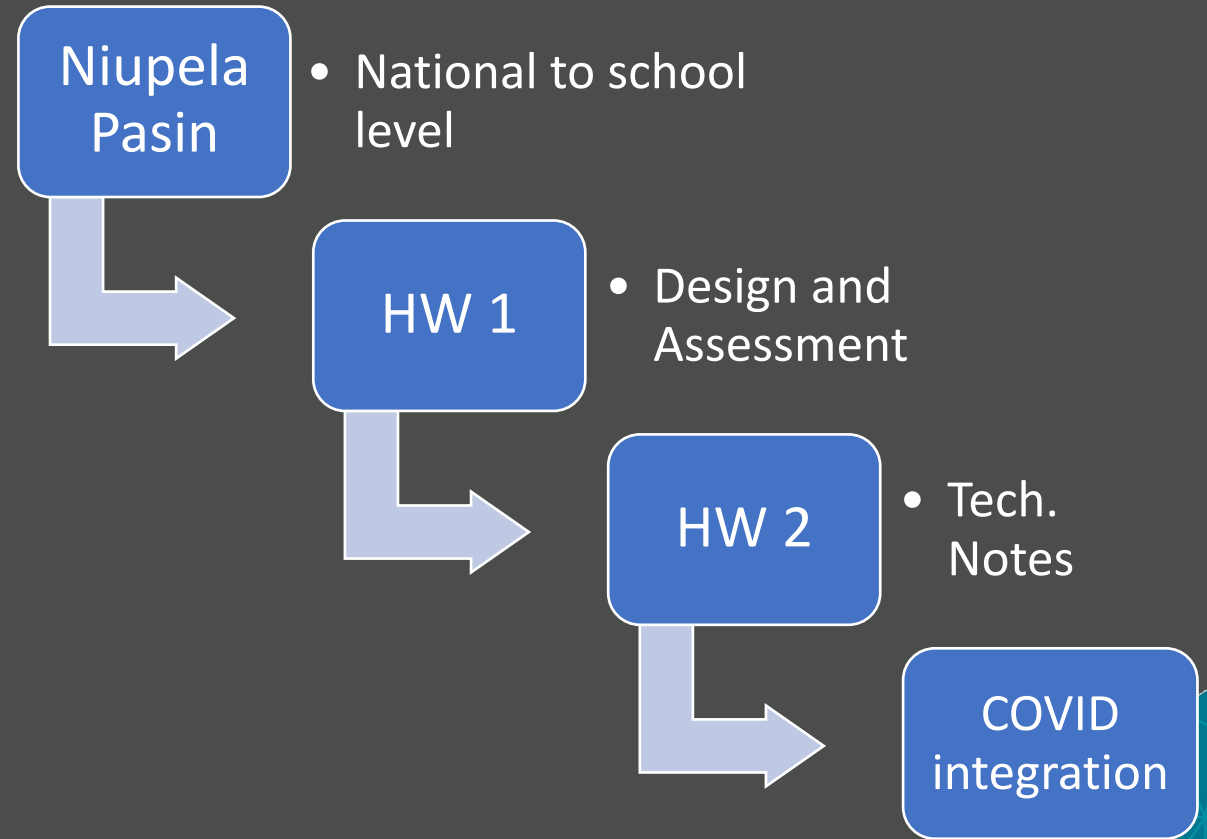
Materials	Quantity
Cement	200 kg
Sand	400 Kg
Aggregate	700 Kg
12mm Plywood for Formwork	2 sqm
Tuffa WASH Basin	2 Nos
100mm PVC pipe	10 mtr
20mm GI Pipe	4 mtr
25mm Poly pipe	20 mtr
25mm Hollow square section	6 mtr
Gate Valve, reducer	2 each
Elbow, Tees for fittings	8 each
Brass Taps	8 Nos
Hand Washing Poster 750X450mm	2 each
<b>Human Resource</b>	
Skilled Mason	2 man days
Labour	4 man days

### 3D View



## Take away notes

1. Cost of inaction
2. Link behavior change to Hygiene and OM
3. Don't be afraid to fail; *capitalize the learning*
4. Willingness to pay
5. Design it, cost it, implement it, assess it, redesign it
6. Do it again
7. Involve communities







**Thank You**

**Q/A**

# **BARRIERS TO IMPLEMENTATION**



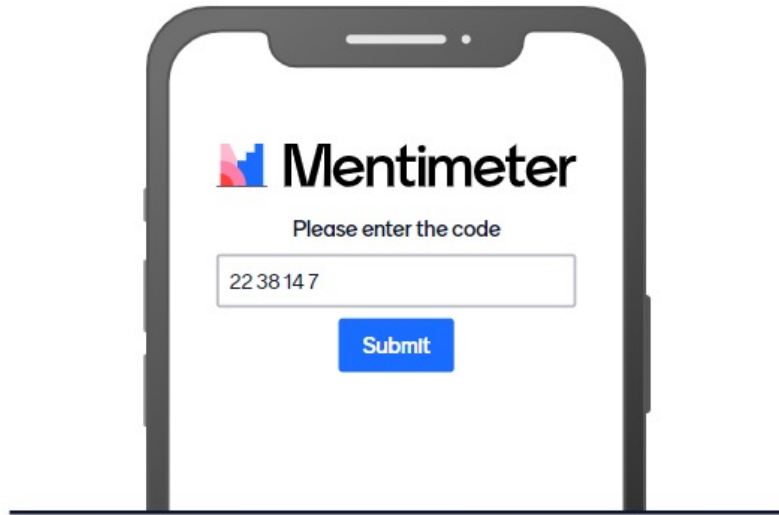
# What are some of the barriers to implementation?

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Go to  
**www.menti.com**



Enter the code  
**22 38 14 7**



Or use QR code

# Barriers

- Cost of facilities
- Payment for water supplied
- Connection of facility
- NRW
- O&M
- Security
- Conflict
- Land issues





# **INTEGRATION WITH UTILITY NETWORKS**



# Connection to the network

- Who pays?
- How far?
- Which pipe route?
- Who owns the land?
- Security and theft
- NRW



# **SUPPLY TO REMOTE HANDWASHING FACILITIES**





Image for illustration purposes only - Pictured with opita



# Considerations


- How will you transport it?
- How much is needed?
- How often?
- Who will do it?
- Safety of staff
- Security
- Maintenance of water quality



**WHAT SORT OF ASSISTANCE IS REQUIRED?**

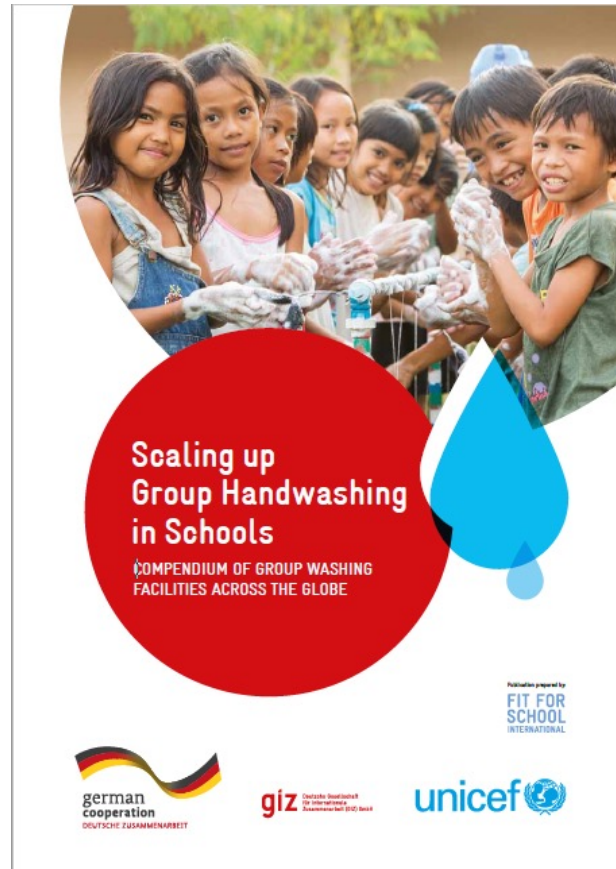


# What sort of assistance is required?

- If you were asked to assist with handwashing facilities today, would you be able to help?
  - What could we look at under the TA?
- 
- A decorative teal geometric pattern consisting of interconnected triangles, located in the bottom right corner of the slide.



# Some References



UNICEF Fact Sheet | Handwashing Stations and Supplies for the COVID-19 response May 2020



## Handwashing Stations and Supplies for the COVID-19 response

### KEY TAKEAWAYS

- Especially in an emergency response, the adaptation, repair, rehabilitation and maintenance of existing infrastructure should be prioritized.
- Handwashing station designs should be appropriate for the intended use case and needs to consider health, design features and local procurement as well as user experience and accessibility.
- The design of the tap is essential to limit cross-contamination between hand washers and with 1 m distance between users should be given a primary consideration in the context of the Covid-19 response.
- UNICEF aims to contribute to creating healthy and sustainable local markets where possible, hence products are generally procured locally.
- Different kinds of soap and alcohol-based hand rub are available as hand cleaning agents. Chlorine-based solutions, ash and handwashing with water only are not recommended, but can be considered as last resort.

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# Conclusion



- Thanks to PWWA, ADB, Carlos from UNICEF and John Dennis
- Closing remarks

## Presenters today

Carlos Vasquez UNICEF PNG

[cvasquez@unicef.org](mailto:cvasquez@unicef.org)

John Dennis EH Consulting (NZ)

[johnd@ehconsulting.co.nz](mailto:johnd@ehconsulting.co.nz)