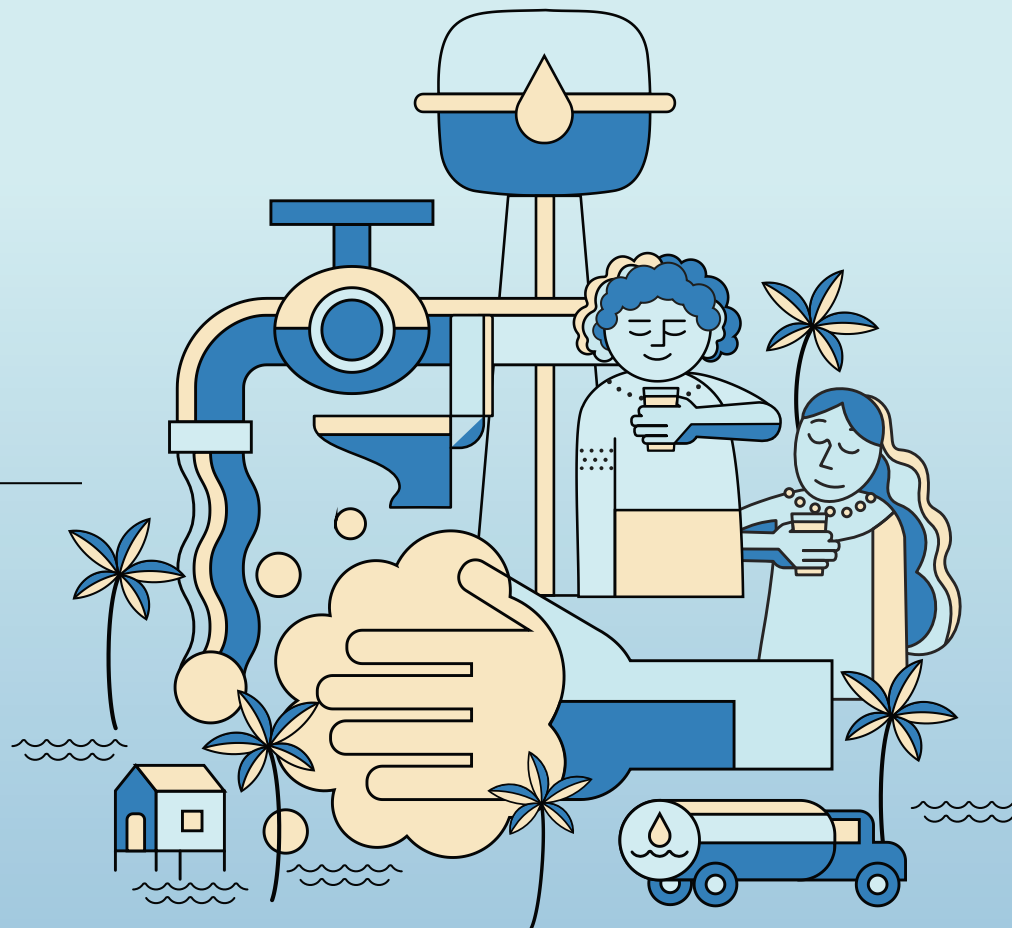


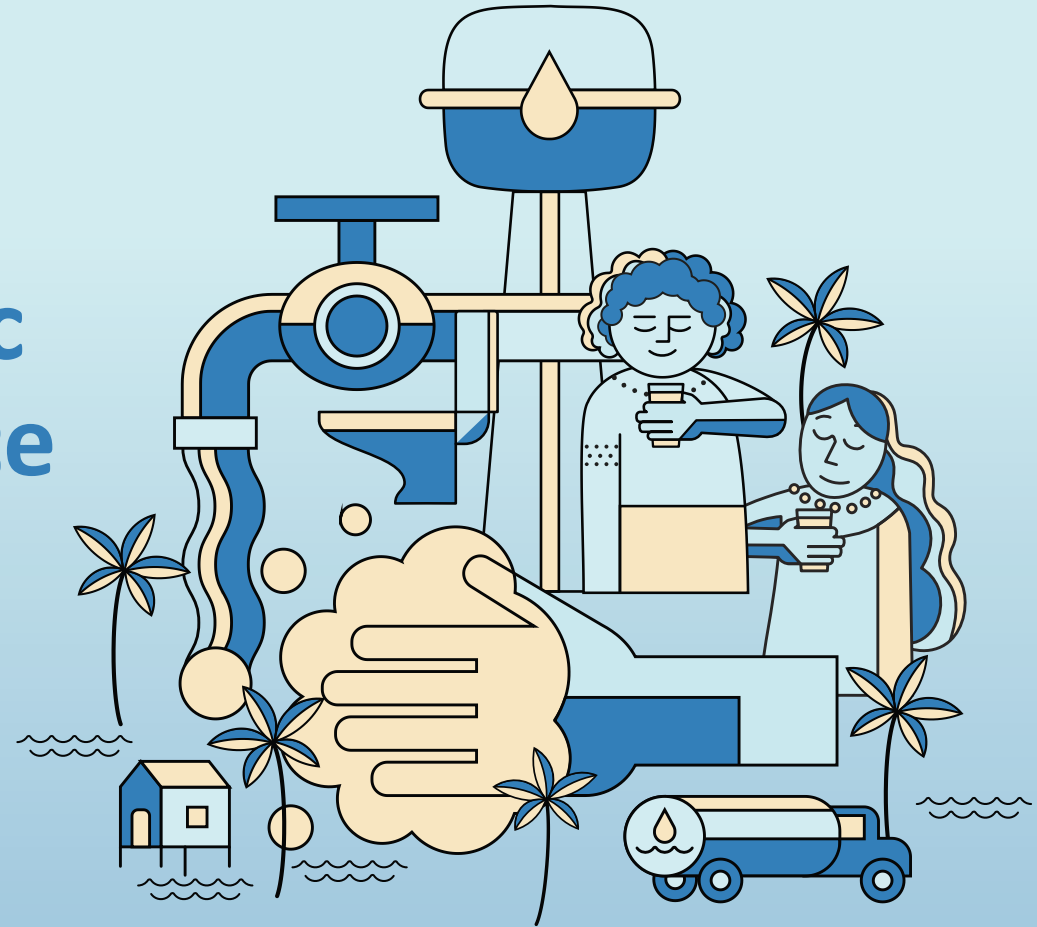
Pacific WASH

WEBINARS



Taking stock: Utility Highlights from the Pacific WASH Technical Assistance

26 November 2025



This is not an ADB material. The views expressed in this document are the views of the author/s and/or their organizations and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy and/or completeness of the material's contents, and accepts no responsibility for any direct or indirect consequence of their use or reliance, whether wholly or partially. Please feel free to contact the authors directly should you have queries.

We will begin shortly.
Participants, kindly note the following for this seminar

Please rename your Zoom name to:

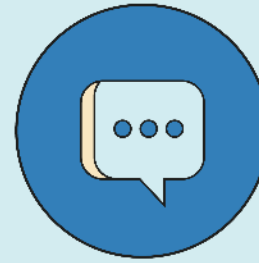
Name, Organisation/Project
(e.g. Aimee Hampel, ADB)



**Please turn your mic off
during the presentation**



**Raise hand
when you want to talk**

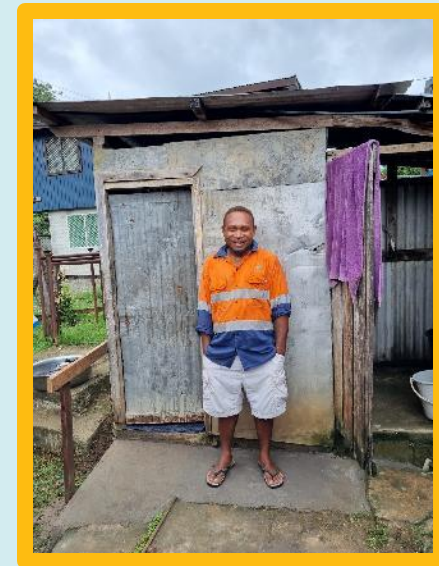


**Use the chat box
for questions/concerns**

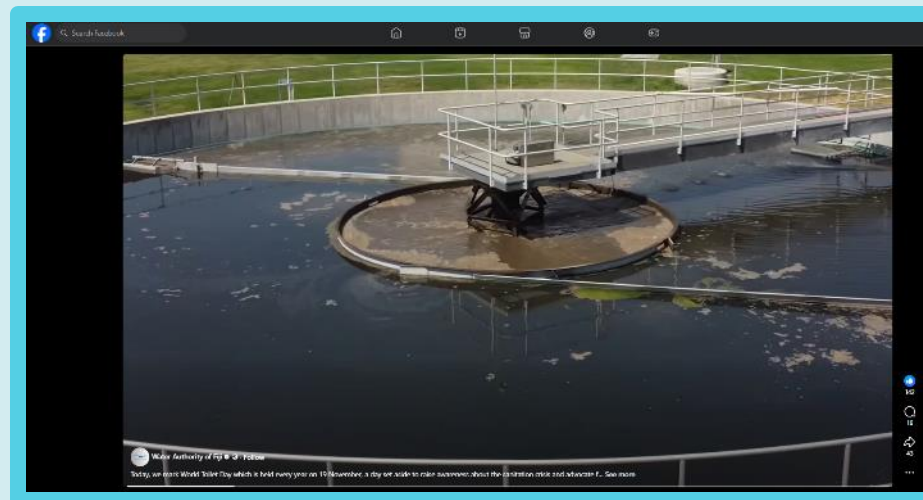


**We have a Q&A portion
after the presentation**

Happy World Toilet Day 2025 – from Solomon Islands



& Water
Authority
Fiji



Webinar schedule

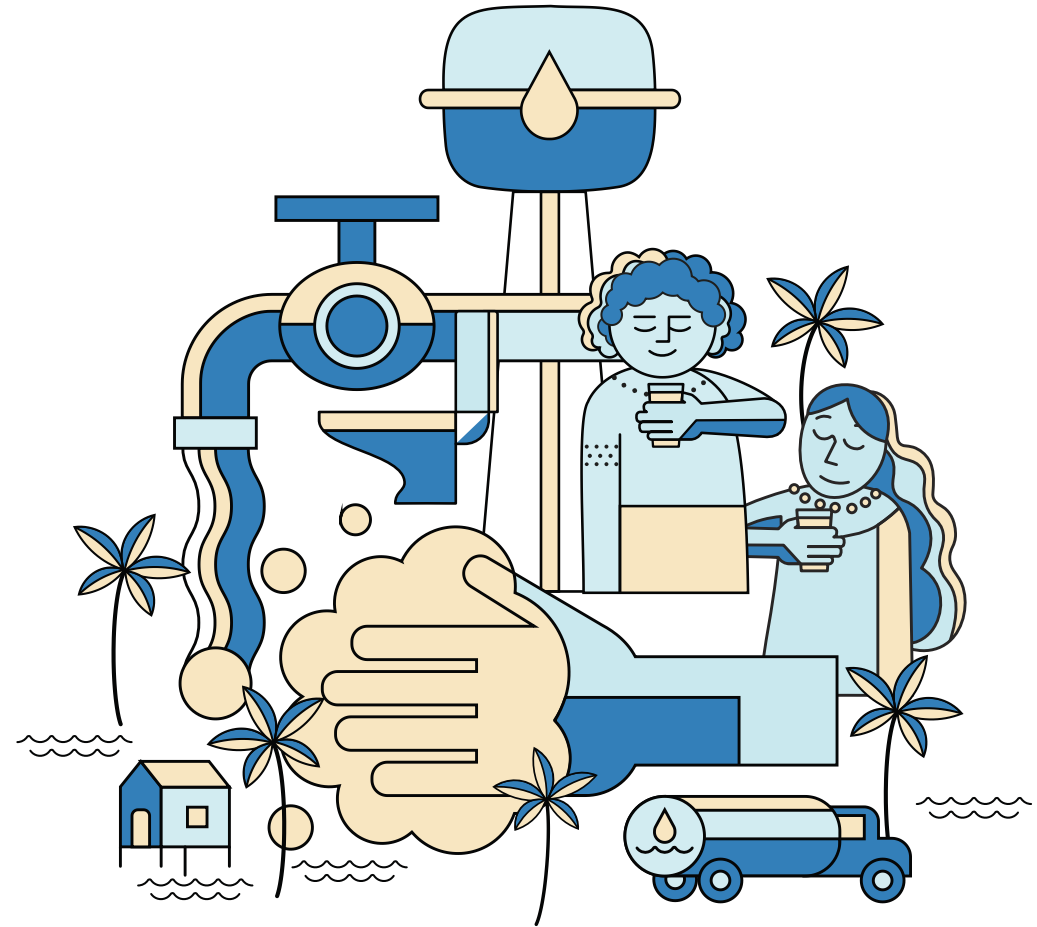
Time	Speaker
10:00am	Welcome – Aimee Hampel-Milagrosa , Senior Urban Development Specialist, Asian Development Bank
10:05am	Opening Remarks – Pitolau Lusia Sefo-Leau , Chief Executive Officer, Pacific Water and Wastewater Association
10:10am	Opening Remarks – Norio Saito , Senior Director, Water and Urban Development Sector Office, Asian Development Bank
10.15am	Presentations <ol style="list-style-type: none">1. Bronwyn Powell, WASH Advisor and Team Leader, Pacific WASH TA2. William Tuivaga, Relationships Manager, To Tatou Vai (Cook Islands)3. Ramona Sio, Asset Management Unit Technician, Samoa Water Authority4. Georgina Hou, WASH National Officer, Solomon Islands Water Authority5. Lopeti Tufui, Principal Hydrogeologist, Tonga Water Board
11.15pm	Closing, poll and group photo



Opening Remarks:

**Chief Executive
Officer of the Pacific
Water & Wastewater
Association (PWWA)**

**Pitolau Lusia
Sefo-Leau**

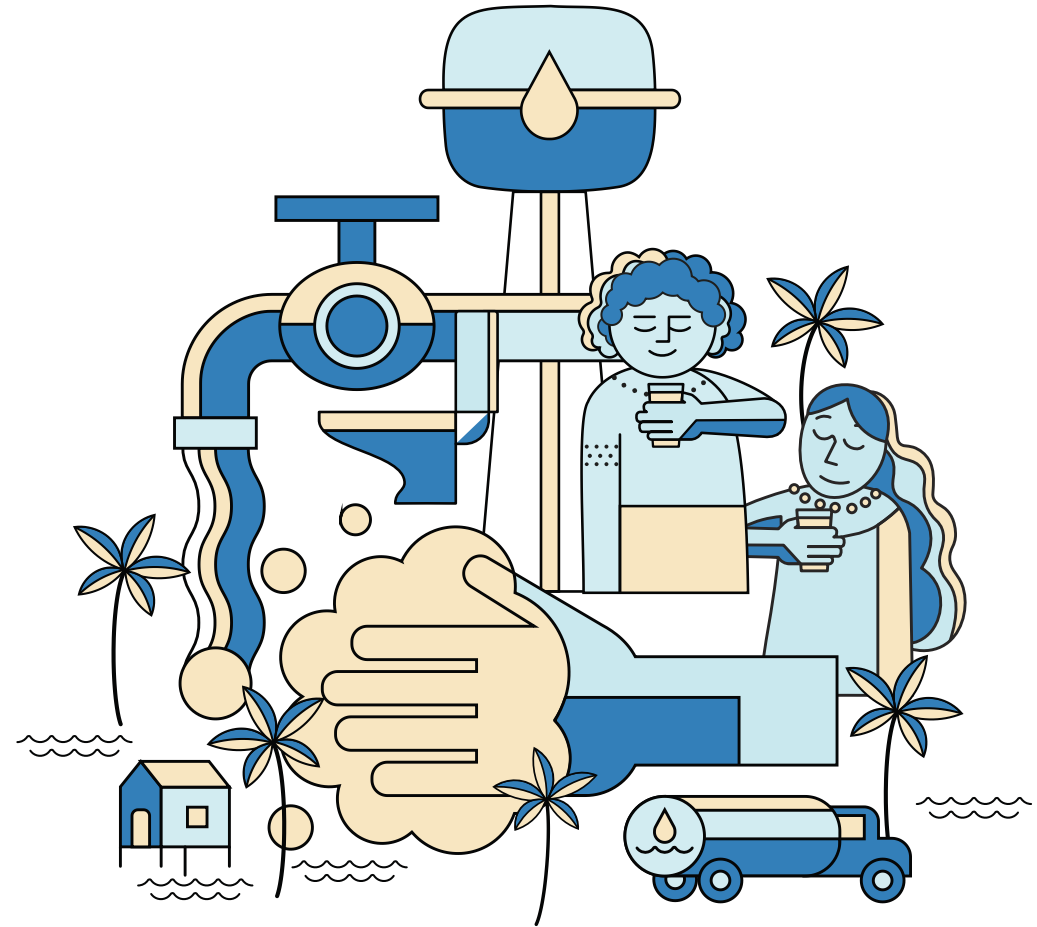




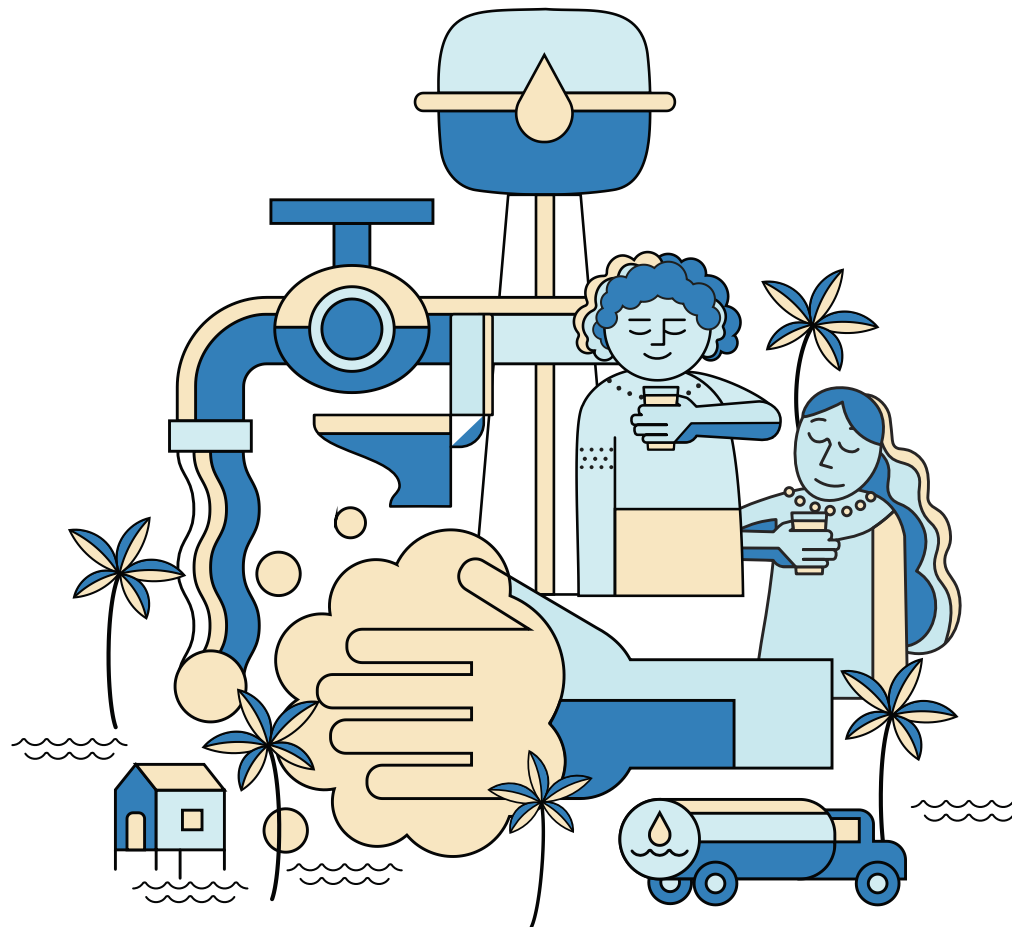
Opening Remarks:

**Asian Development
Bank Senior
Director, Water and
Urban Development
Sector Office**

Norio Saito



Group photo!



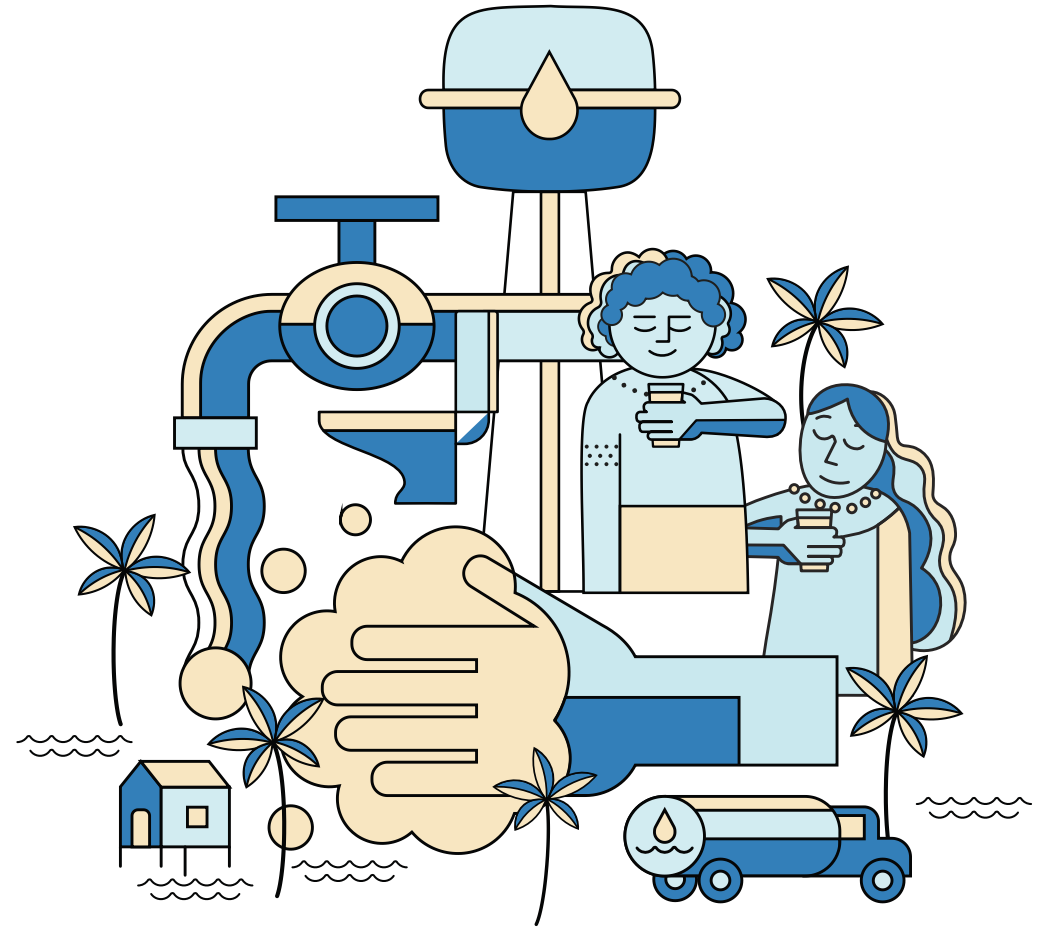
Spotlight on Strengthening Water, Sanitation, and Hygiene Practices and Hygiene Behavioral Change Technical Assistance (TA 6551 – REG)



Bronwyn Powell

WASH Advisor

Asian Development Bank



Pacific WASH TA

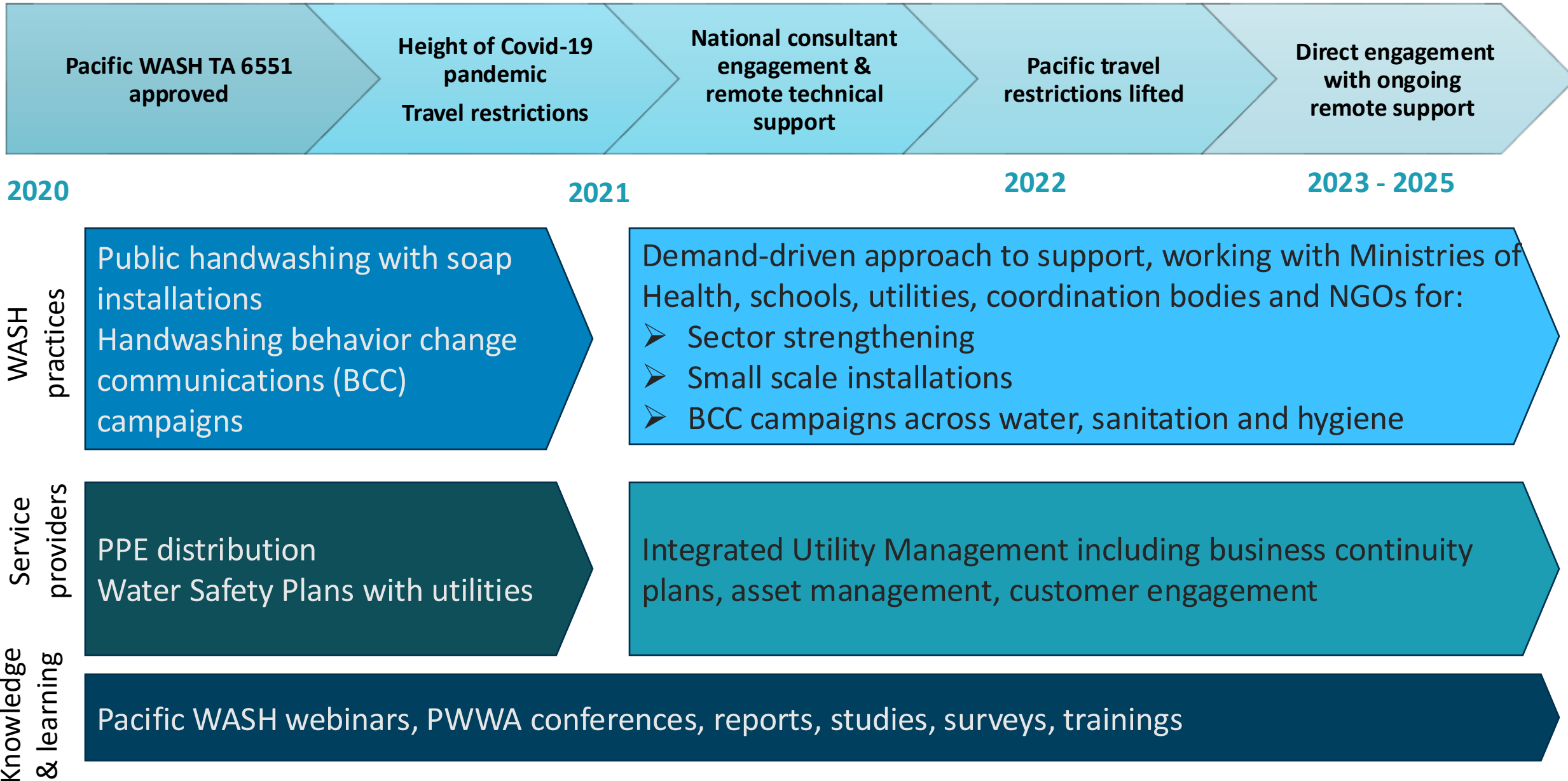
Impact: Improve health outcomes in the Pacific

Outcome: Disease transmission pathways in ADB's Pacific DMC populations reduced

Output a: WASH practices in households and public areas improved

Output b: Enabling environment for improved and sustainable hygiene strengthened

- USD 5 million from ADB Technical Assistance Special Fund
- 5-year implementation (2020 – 2025)
- Type of TA: Capacity development and policy advice
- Regional TA – 14 Pacific Developing Member Countries
- Implemented initially by ADB's Pacific Urban Development, Water Supply and Sanitation Division (PAUW); then after new operating model, under the Water and Urban Development Sector Office (WUD), Southeast Asia and Pacific



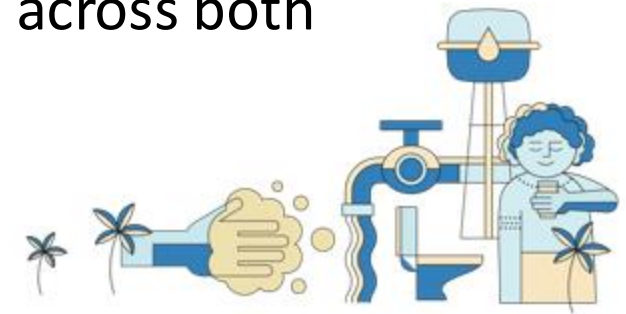
Intervention support areas

Over 70 distinct interventions

[illegible]

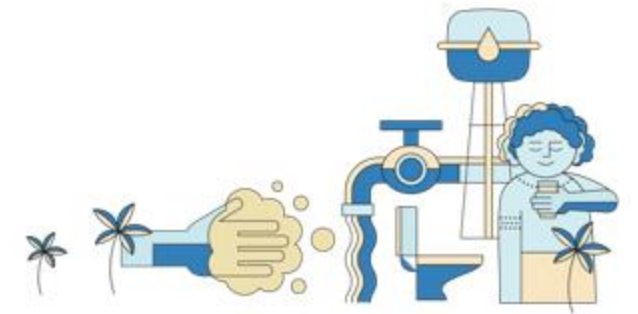
Water Wise Wantok campaign

- Developed and delivered with Water PNG
- Addressed priority non-revenue water (NRW) issues:
 - (i) bill payment
 - (ii) leak detection
- Raised awareness of the importance of handwashing with water and soap
- Ran in Port Moresby throughout 2023 and 2024 via mass media across both physical and digital channels



‘Clean Water for All Kukis’

- Collaboration between Ministry of Education, Ministry of Health, Cook Islands Investment Corporation (CIIC), Red Cross and ADB
- Initial BCC campaign - ‘Clean Water for All Kukis’ – highlighted gaps in facility access to practice good handwashing behaviors
- Undertook full assessment of School WASH facilities at all schools on Rarotonga
- Negotiated MOU with all stakeholders and schools to upgrade to meet NZ standards with O&M and handover agreements
- Installed: 25 handwashing basins with timeflow taps; 122 water filter cartridges; 8 communal handwashing troughs; 10 drinking fountains; 6 junior size toilets



Achievements

Achievements	
Improving peoples' WASH practices	> 1 million people reached with WASH behavior change campaigns >35,000 households reported improved WASH practices 2,800 people accessing 45 new handwashing facilities in public places and schools
WASH service providers	14 utilities assessed to improve operational and financial performance
Knowledge & learning	30 knowledge products produced 11 service providers reported improved knowledge, capacity and services to respond to pandemics



Highlights

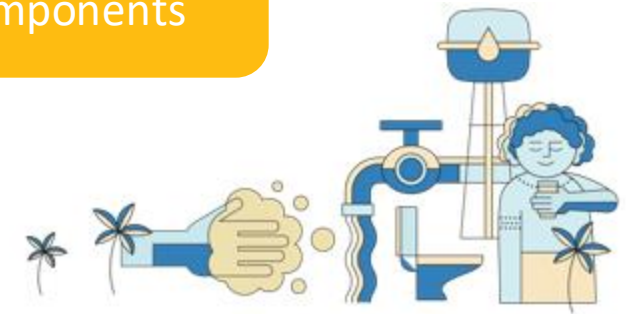
Flexible demand-driven approach embedded in local context

Enhanced and complemented existing initiatives, enhancing sustainability of outcomes from ADB, govt and other development partners

Demonstrate success of utilities partnering with NGOs

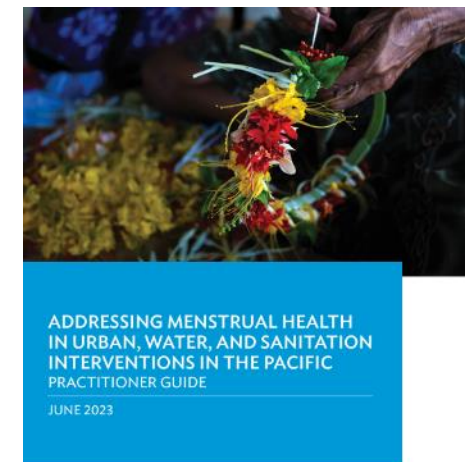
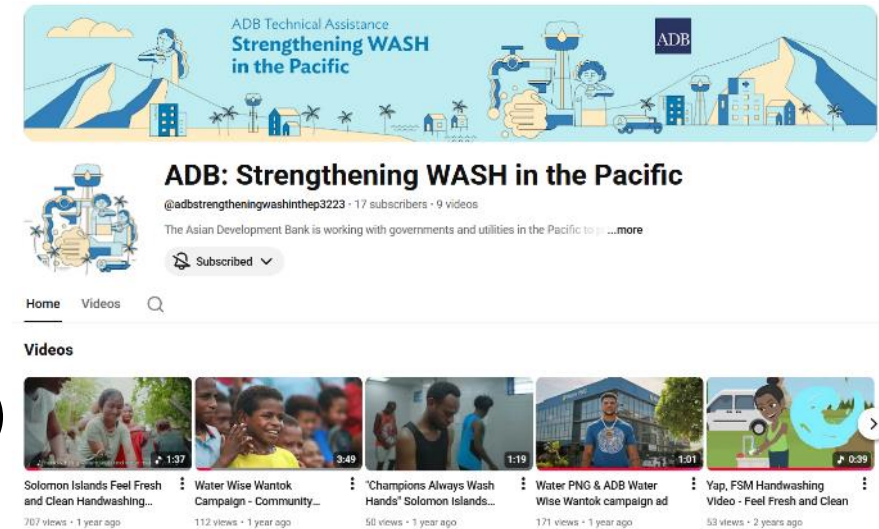
Replicable and scalable models for strengthening sustainable service delivery

Demonstrated ADB investments can successfully incorporate BCC campaigns and community and household components

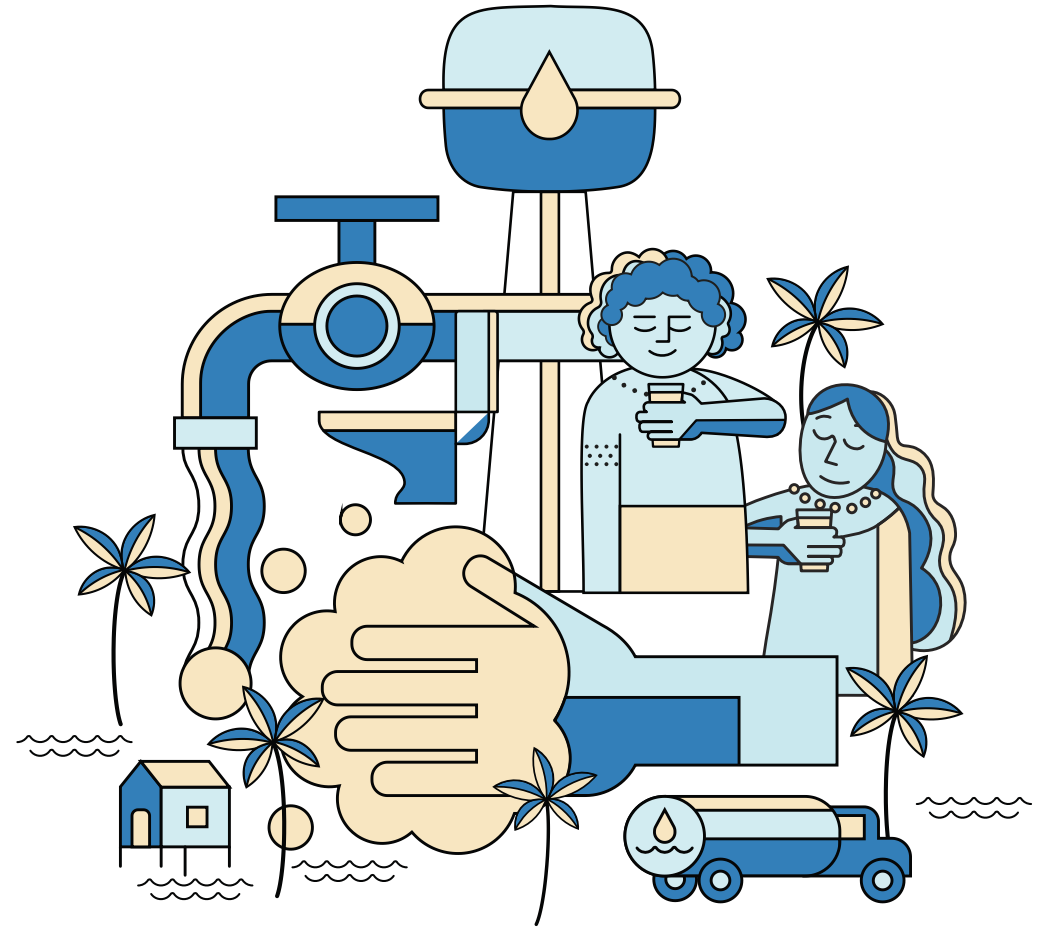


Access our knowledge products!

- [Pacific WASH webinar series](#) co-sponsored with PWWA
- Youtube channel - WASH BCC campaign videos
- [Review of Opportunities for the Pacific WASH Sector](#) (2021)
- [Menstrual Hygiene Management in the Pacific Guidance Note](#) (2023)
- [Good Enough Guide to Onsite Sanitation in the Pacific](#) training materials
- [ADB Blogs](#): Financing clean water supply; desalination; menstrual health; Vanuatu rural WASH
- UNESCO / ADB Report: [The Interconnected Nature of Water, Gender and Climate](#)



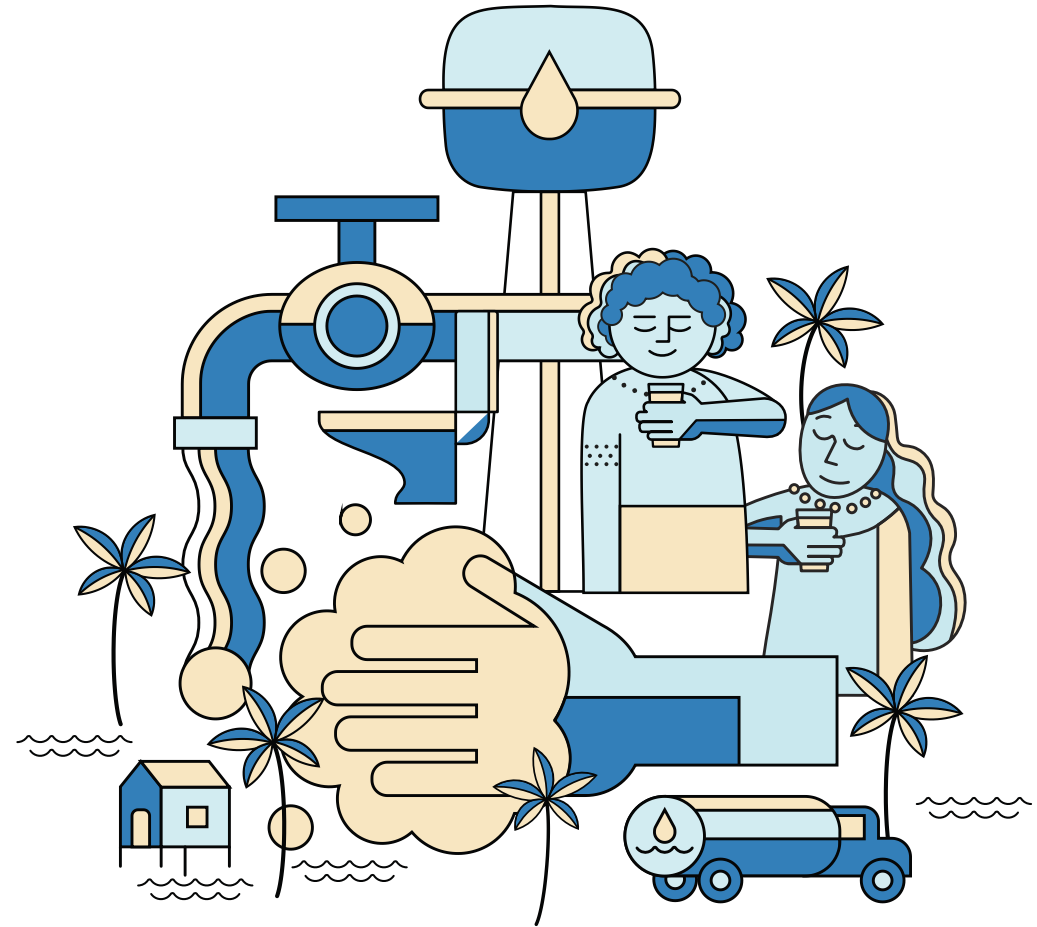
**Thank you to everyone
who has been a part of
the Pacific WASH TA
over the years!**



Strengthening Water Services for Rarotonga, Cook Islands



William Tuivaga
Relationships Manager
To Tatou Vai (Cook Islands)



Summary of Presentation



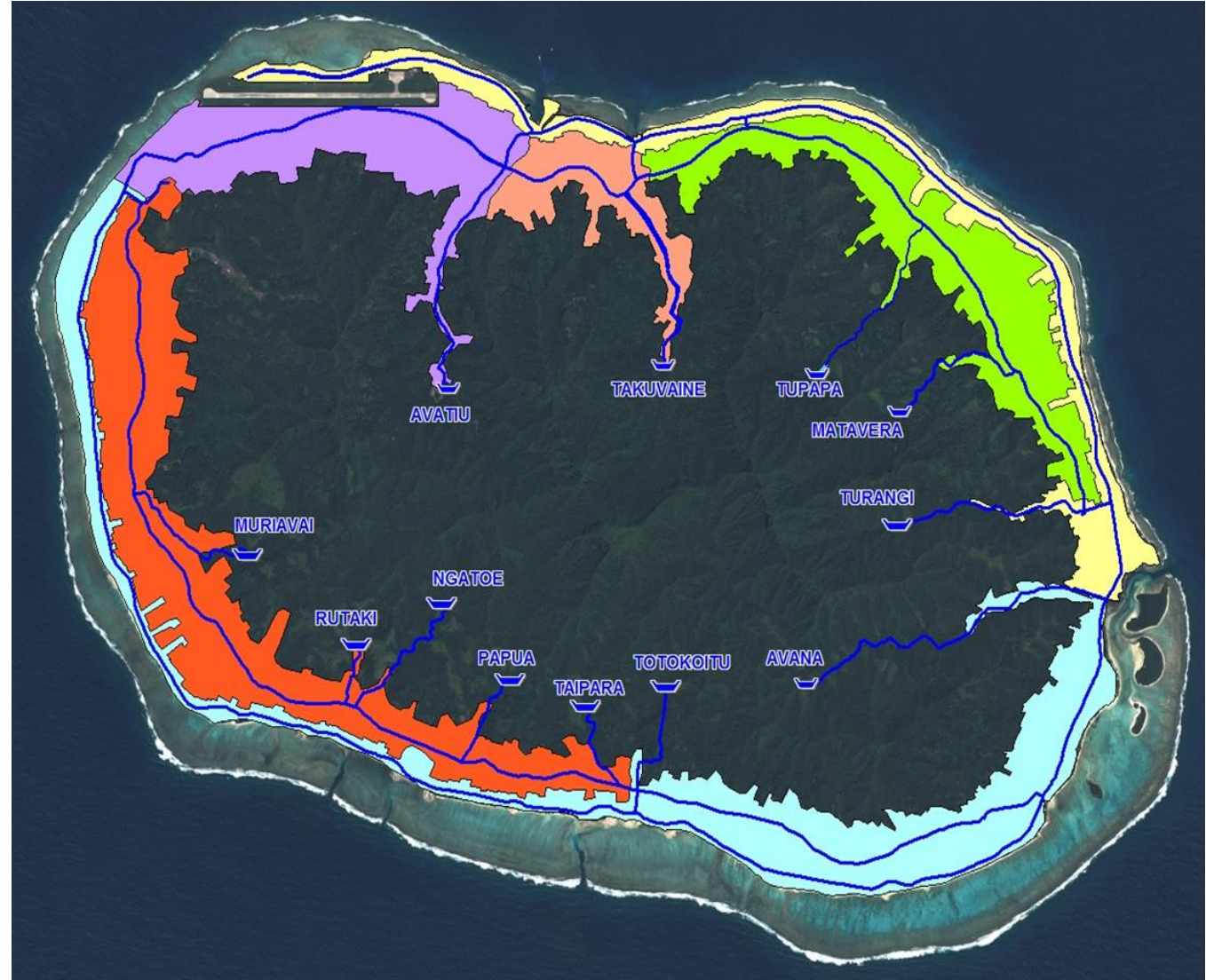
Rarotonga – on the move (growth)



Rarotonga rainfall – approximately 2,500mm/ Annum



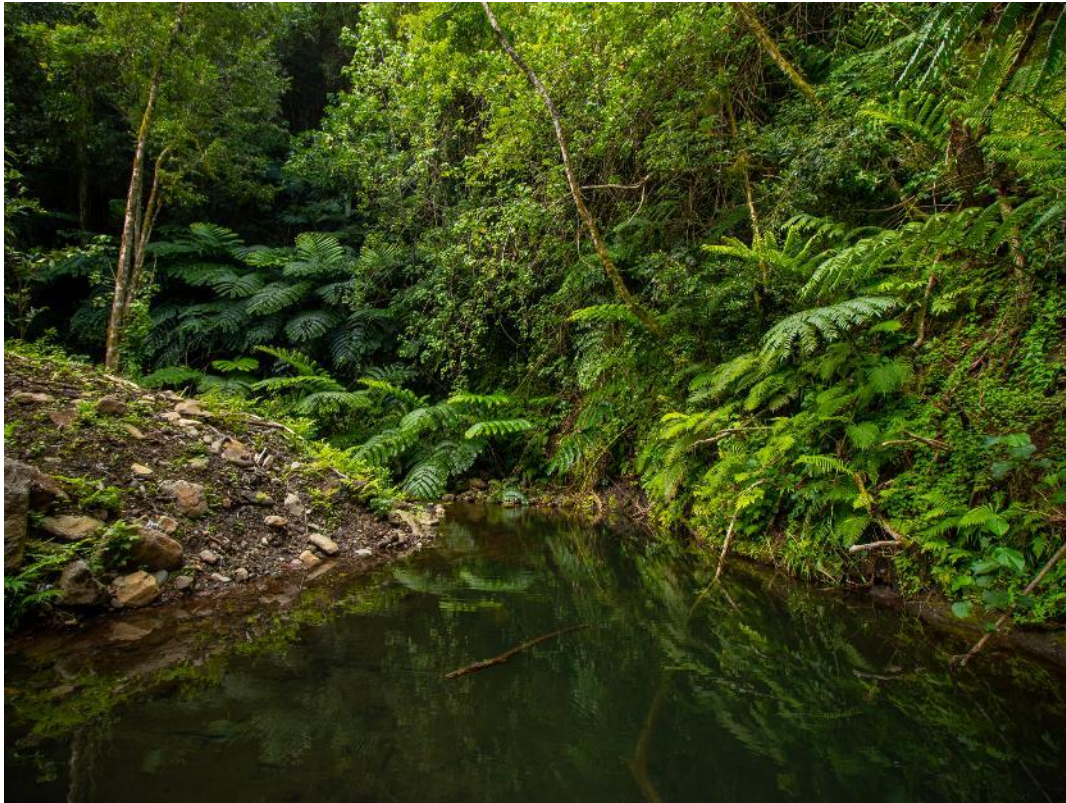
Background – Rarotonga water infrastructure



Setting standards

Customer agreement:

<https://www.totatouvai.co.ck/publications>



Connection code:

<https://www.totatouvai.co.ck/publications>



Standards: PRE



Standards: RATIONALE



Improving TTV's Work



Strengthening Customer Trust





Meitaki maata (thank you)

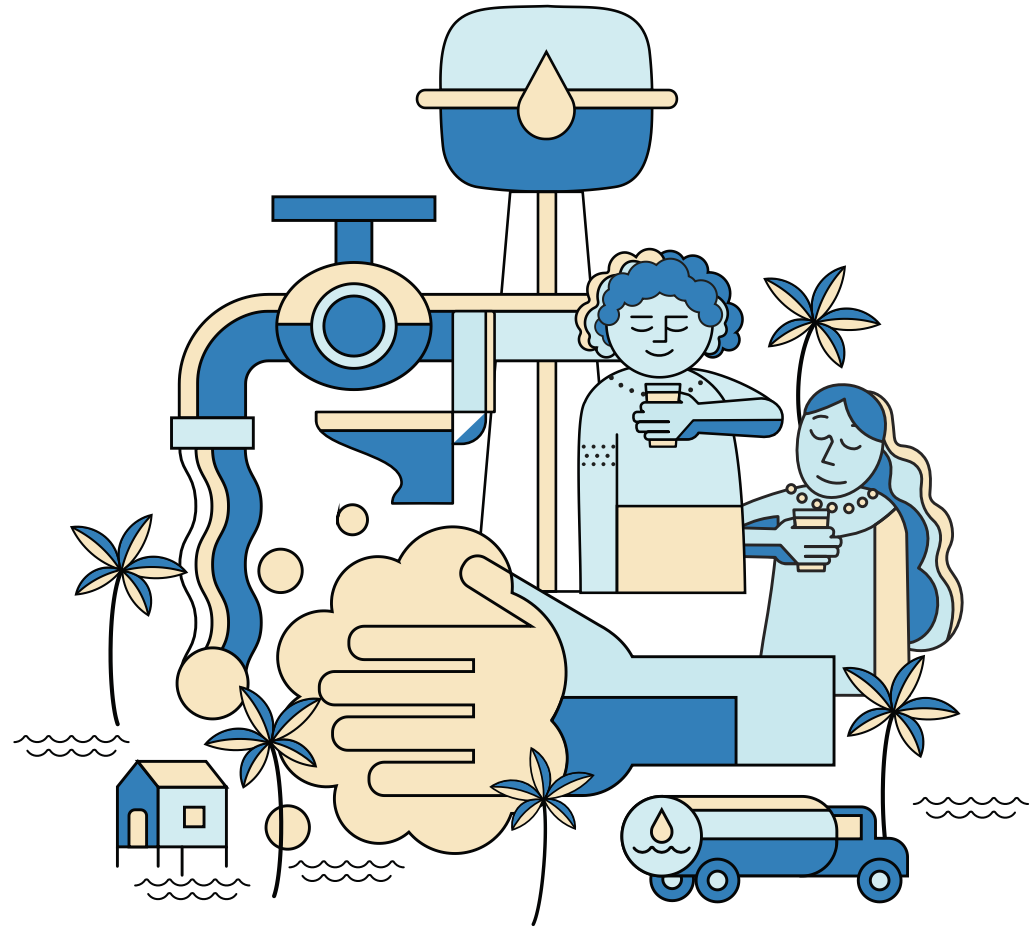


Samoa Water Authority Asset Management



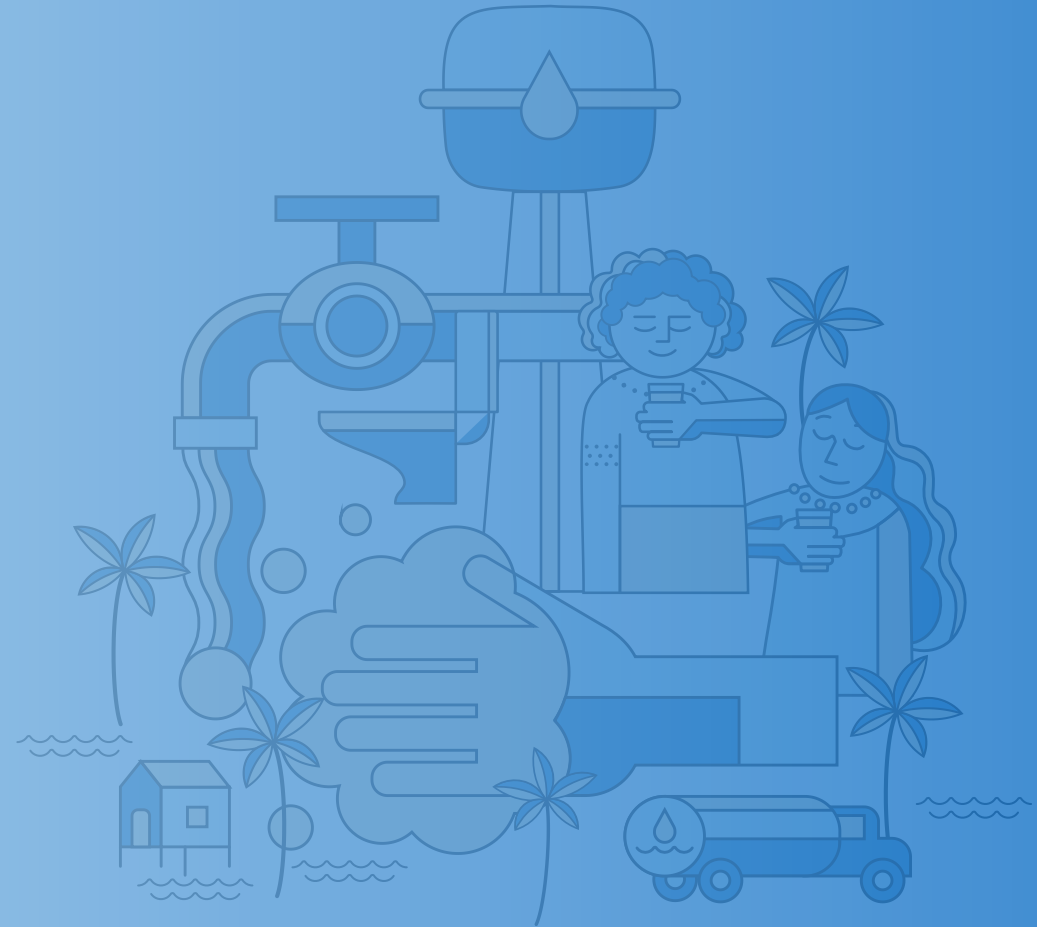
Ramona Sio

Asset Management Unit Technician
Samoa Water Authority

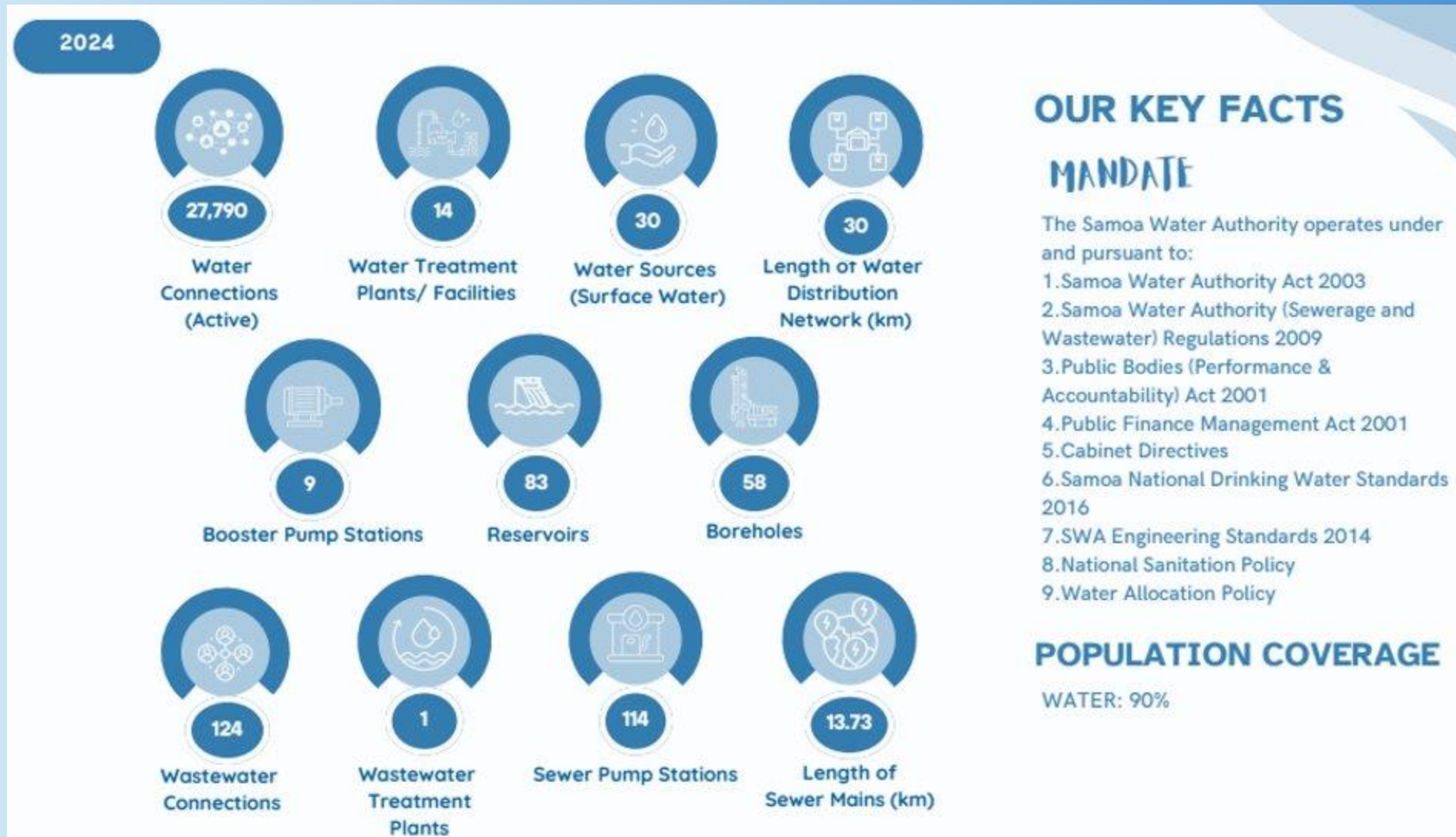


OUTLINE

- Who we are
- What the Data Told Us
- Our Assets Strategy
- Our AM Journey
- Our Strategic Plans and Framework Map
- Operationalizing the Assets Strategy
- Asset Management Maturity Assessment
- Key Takeaways



Who we are – Why it matters



What the Data Told Us

Major Issues

- High NRW
- Lack of data on infrastructure condition
- Data gaps – Little to no asset management knowledge

Need Improvement

- Efficiency
- Meter Issues
- Implementation of Asset Information System

Strengths

- Asset Register Progress
- Strong teams
- Community Links

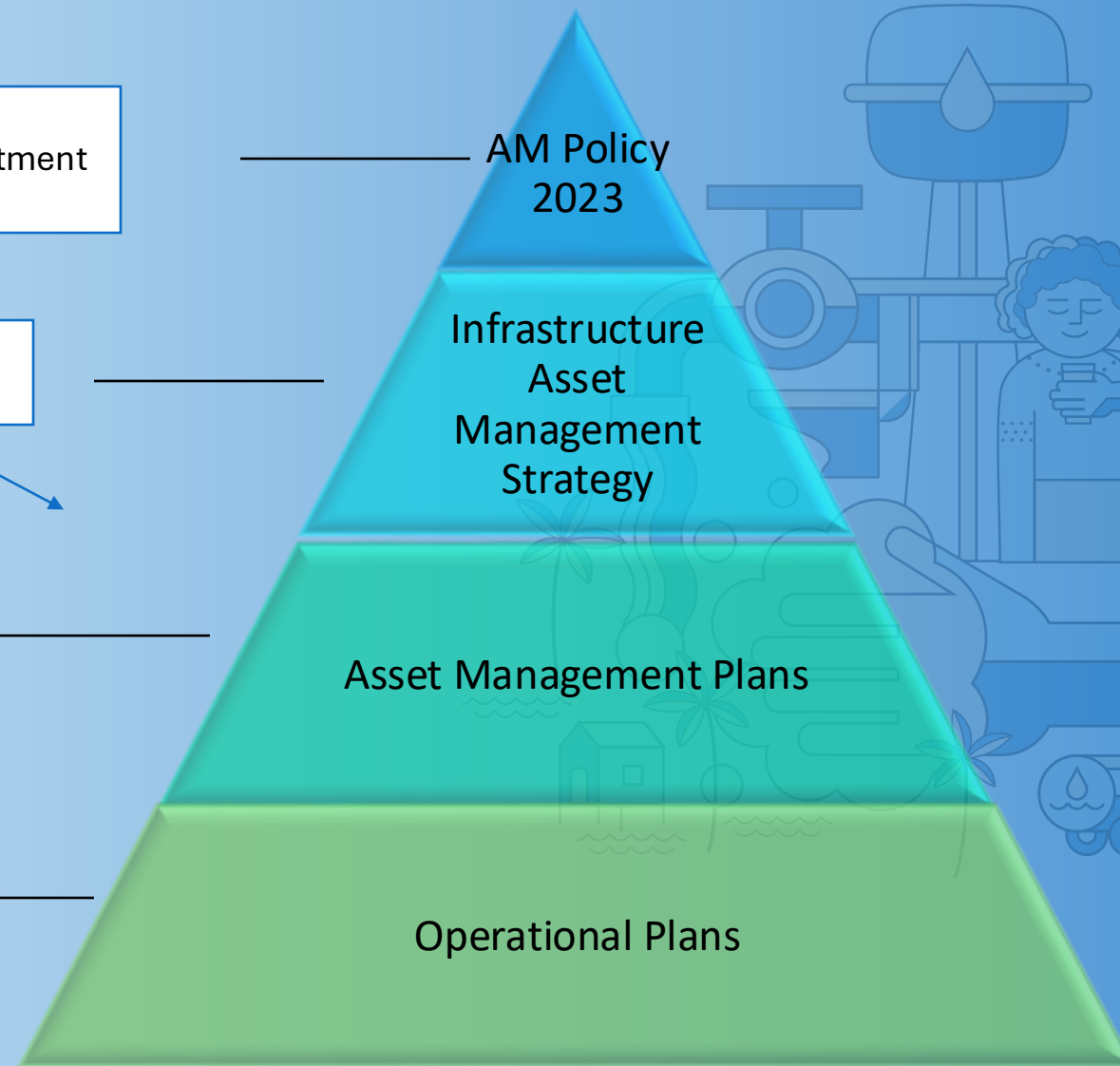
Our Asset Strategy

- Our guiding principles
- Whole-of-organization commitment (Board-level to employees)

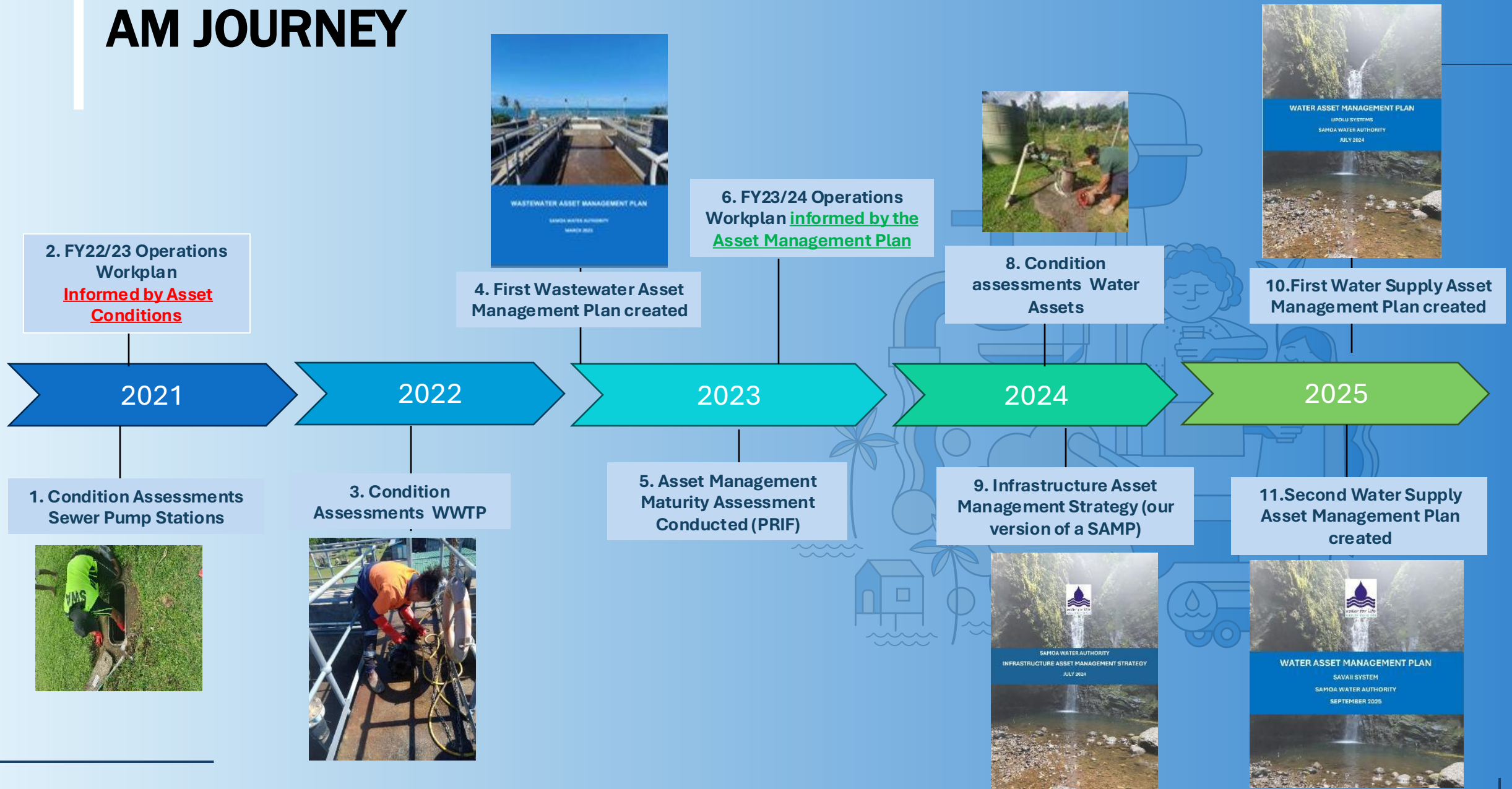
- Our guiding frameworks for capital and maintenance investments

- Renewal plans financial forecasts
- Capital investments for population growth
- Climate resilience
- Asset improvement plans

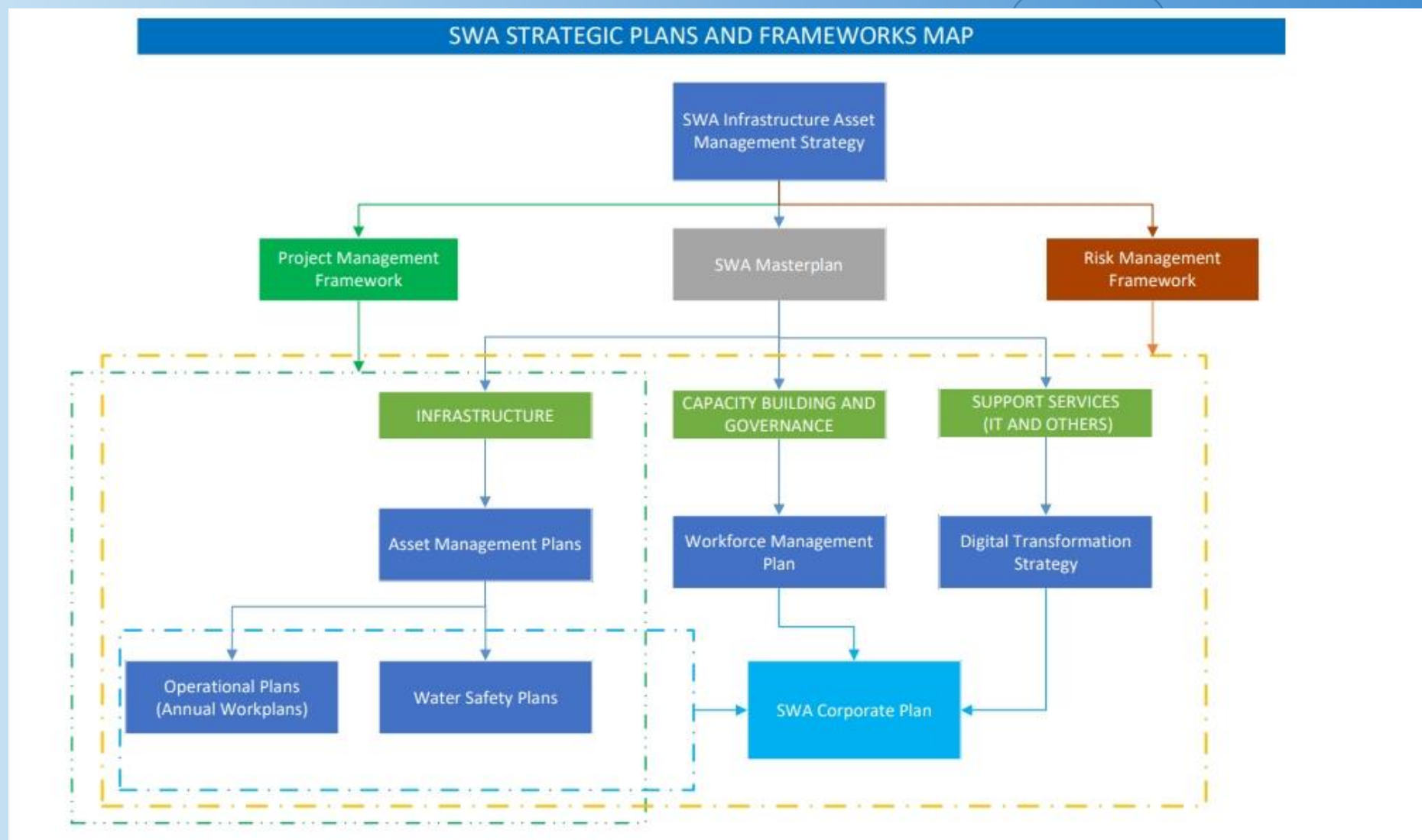
- Annual workplans for operations and maintenance
- Annual renewals for NRW reduction
- Budget requirements and allocations



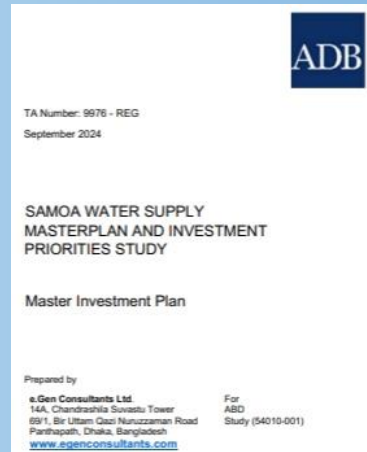
AM JOURNEY



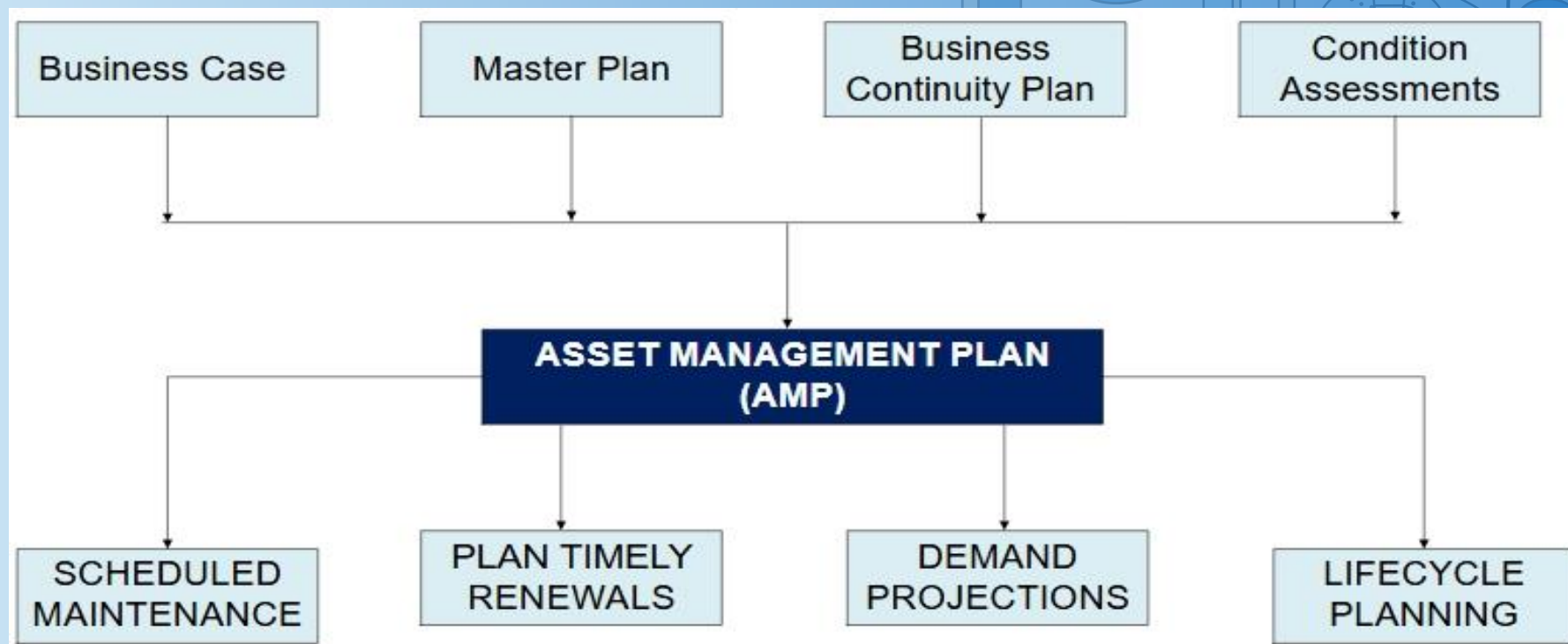
STRATEGIC PLANS AND FRAMEWORK MAP



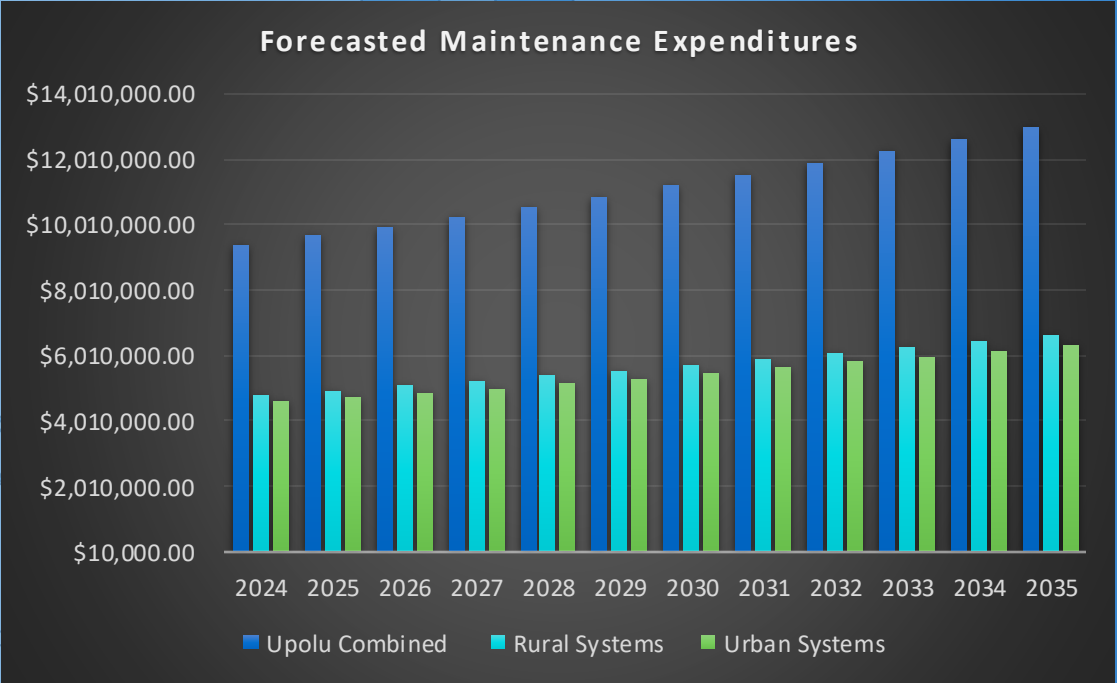
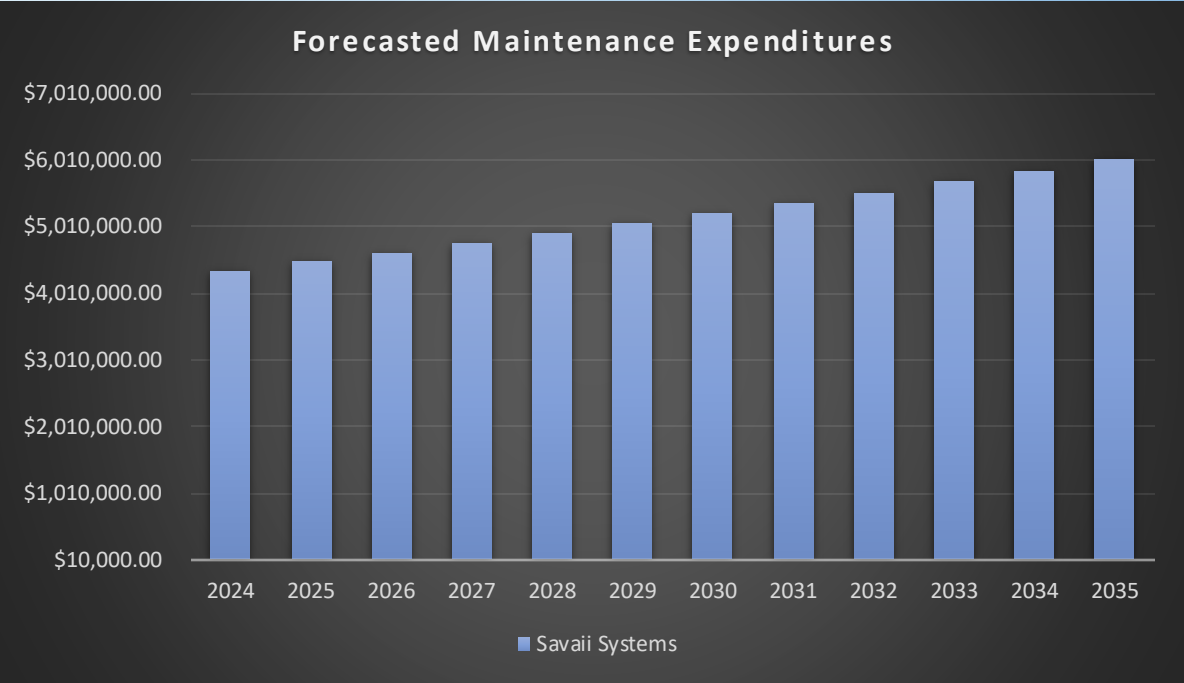
OPERATIONALIZING THE ASSETS STRATEGY cont'd



Assessed By: Sharon Loo	
Issue Date: 31/07/2024	
Approved by: ADB Engineer	
Asset Location	Public Area
Asset Name	Sanitary Condition
Asset Description	Sanitary (water supply and sewage)
Date Assessed	23/07/2024
Location Index	
Mounting/Placing/Support	3
Surface / External Condition	3
Corrosion	2
Cabling/Wiring	3
Pipe/Wall	2
Joint/Fit/Filling/Leakage	2
Cracking/Corrosion/Sealing	3
Minor	3
Rate of Deterioration	3
Overall Condition Rating	3 Average
Notes	
Compliance	Records in good condition. No leakage and minor corrosion.
Overall Comments	
Photos	

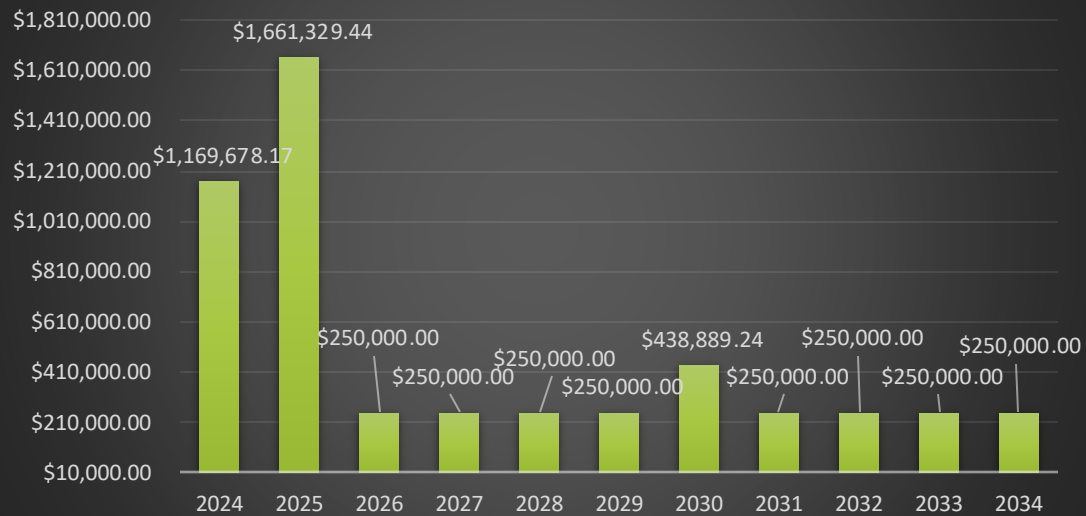


OPERATIONALIZING THE ASSETS STRATEGY cont'd

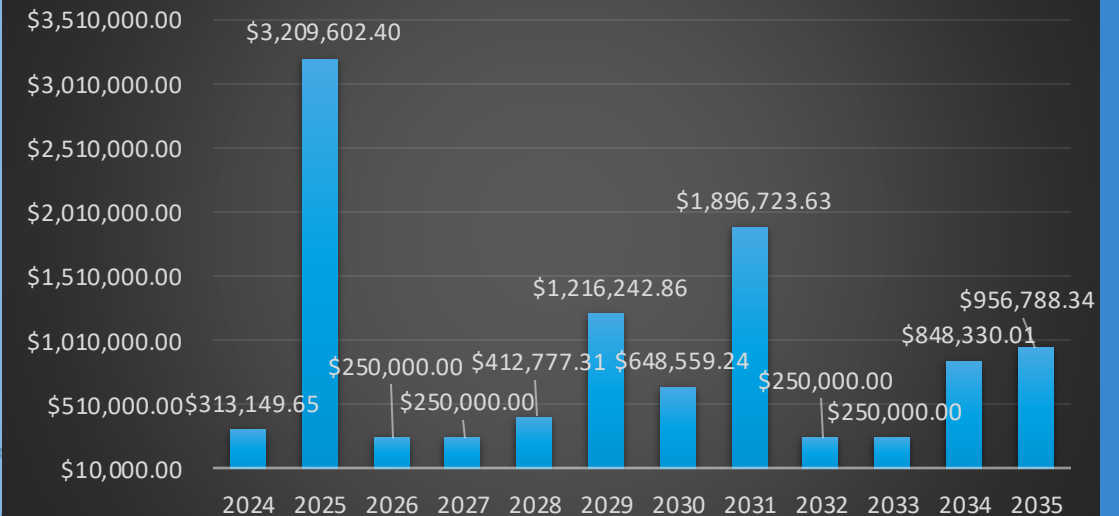


OPERATIONALIZING THE ASSETS STRATEGY cont'd

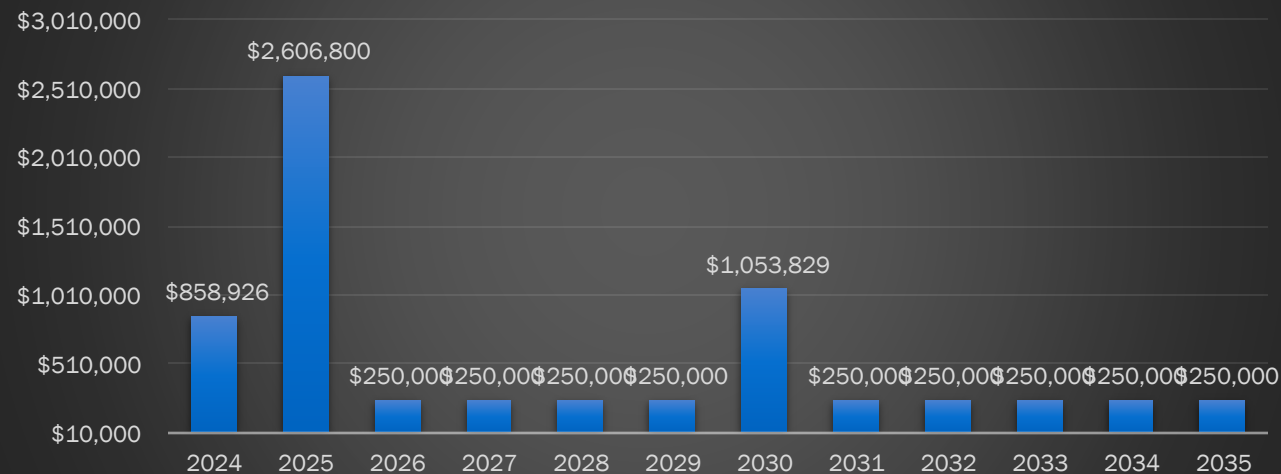
Forecasted Renewal Expenditures for Rural Assets



Forecasted Renewals for Urban Assets

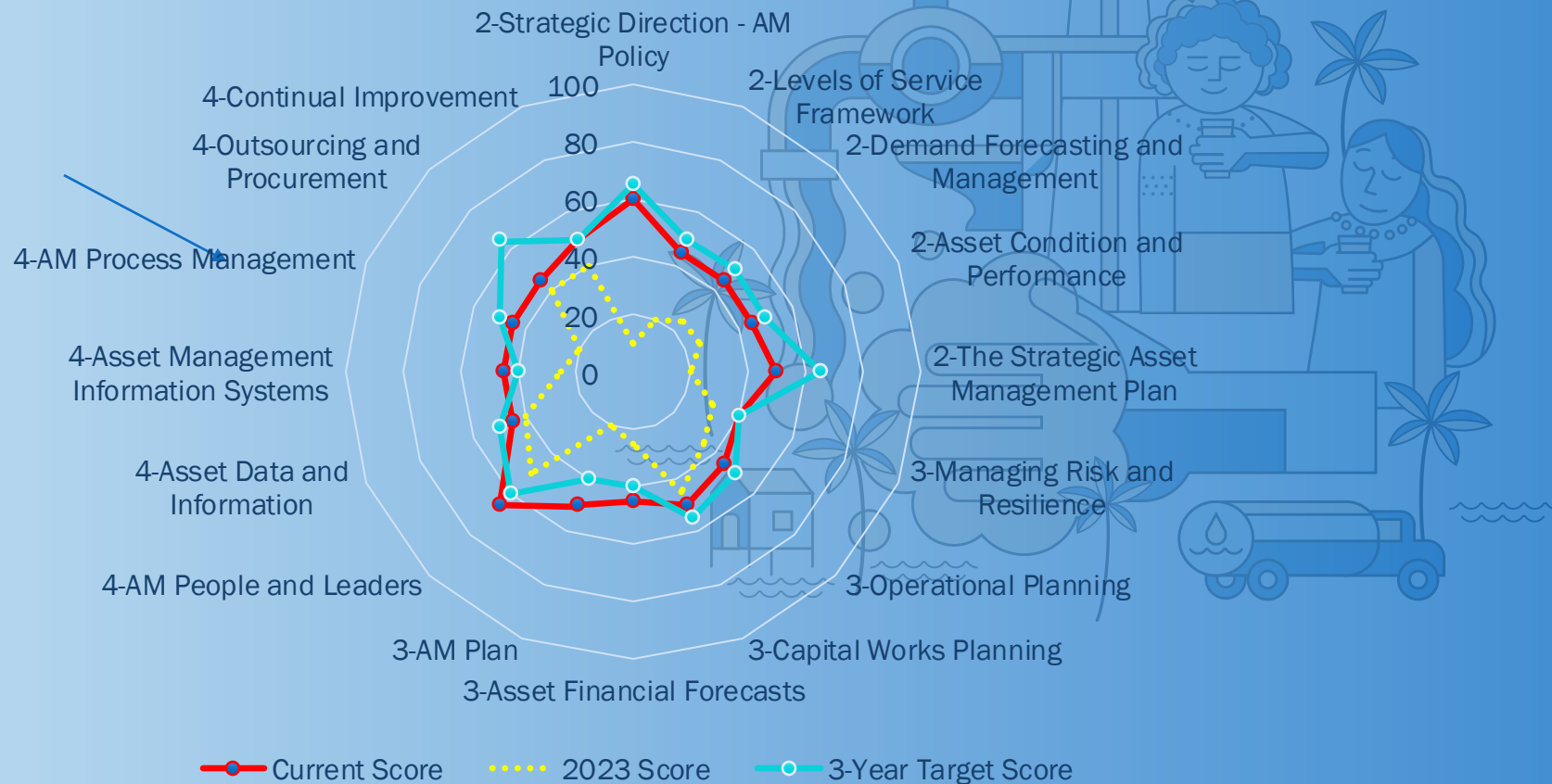


Forecasted Renewals for Savaii Assets



ASSET MANAGEMENT MATURITY ASSESSMENT

Maturity Levels				
Aware	Basic	Core	Intermediate	Advanced
0-20	21-40	41-60	61-80	81-100



KEY TAKEAWAYS



ACKNOWLEDGEMENTS

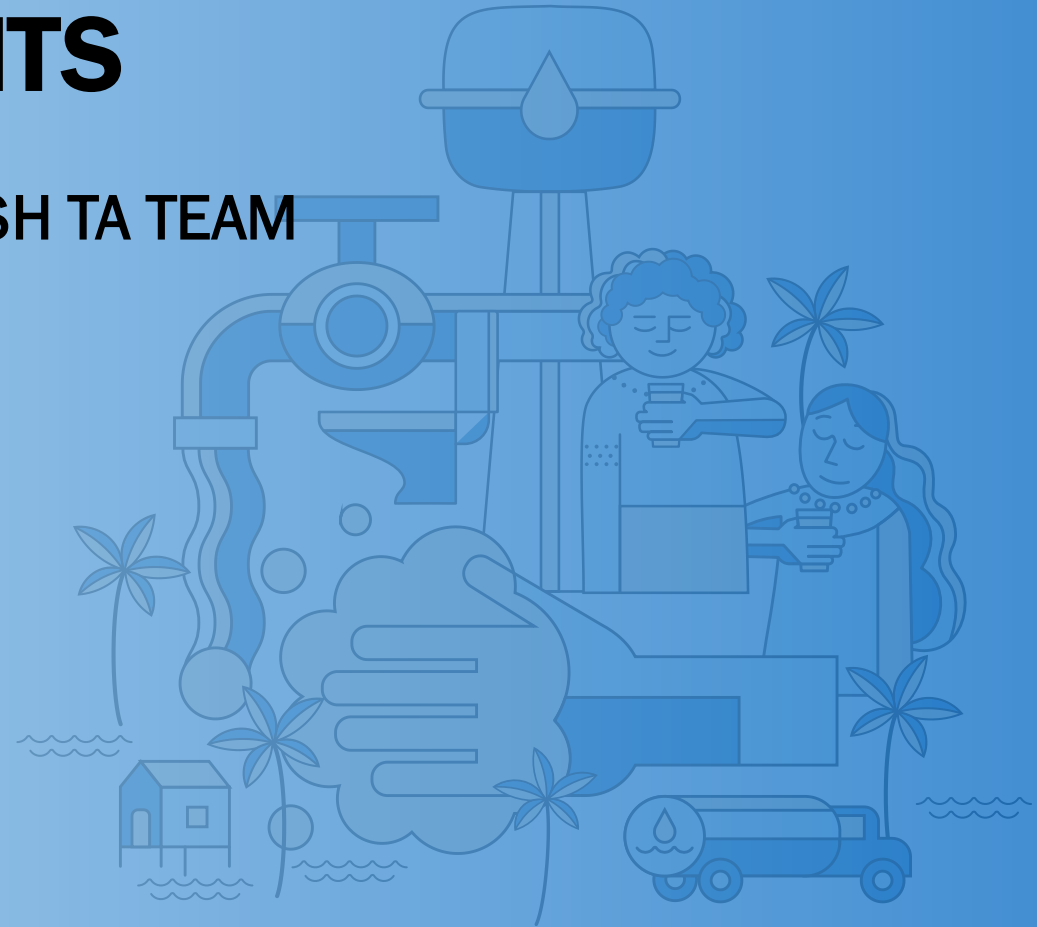
ASIAN DEVELOPMENT BANK – WASH TA TEAM

- MR DEAN TAYLOR
- MR MARK ELLERY
- MS BRONWYN POWELL

PRIF

- MS CHRISTINE MCCORMACK

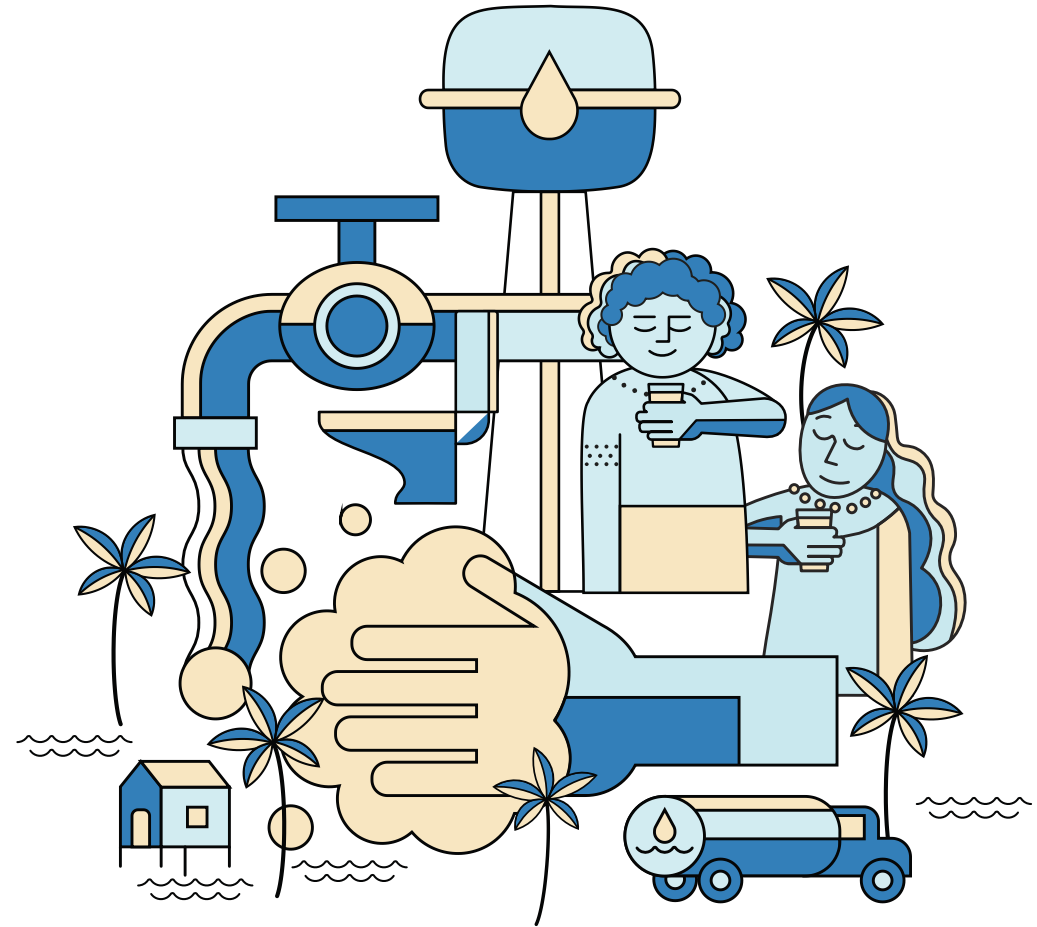
THANK YOU



National Handwashing Campaign and WASH Training for Solomon Water Customers



Georgina Hou
WASH National Officer
Solomon Islands Water Authority

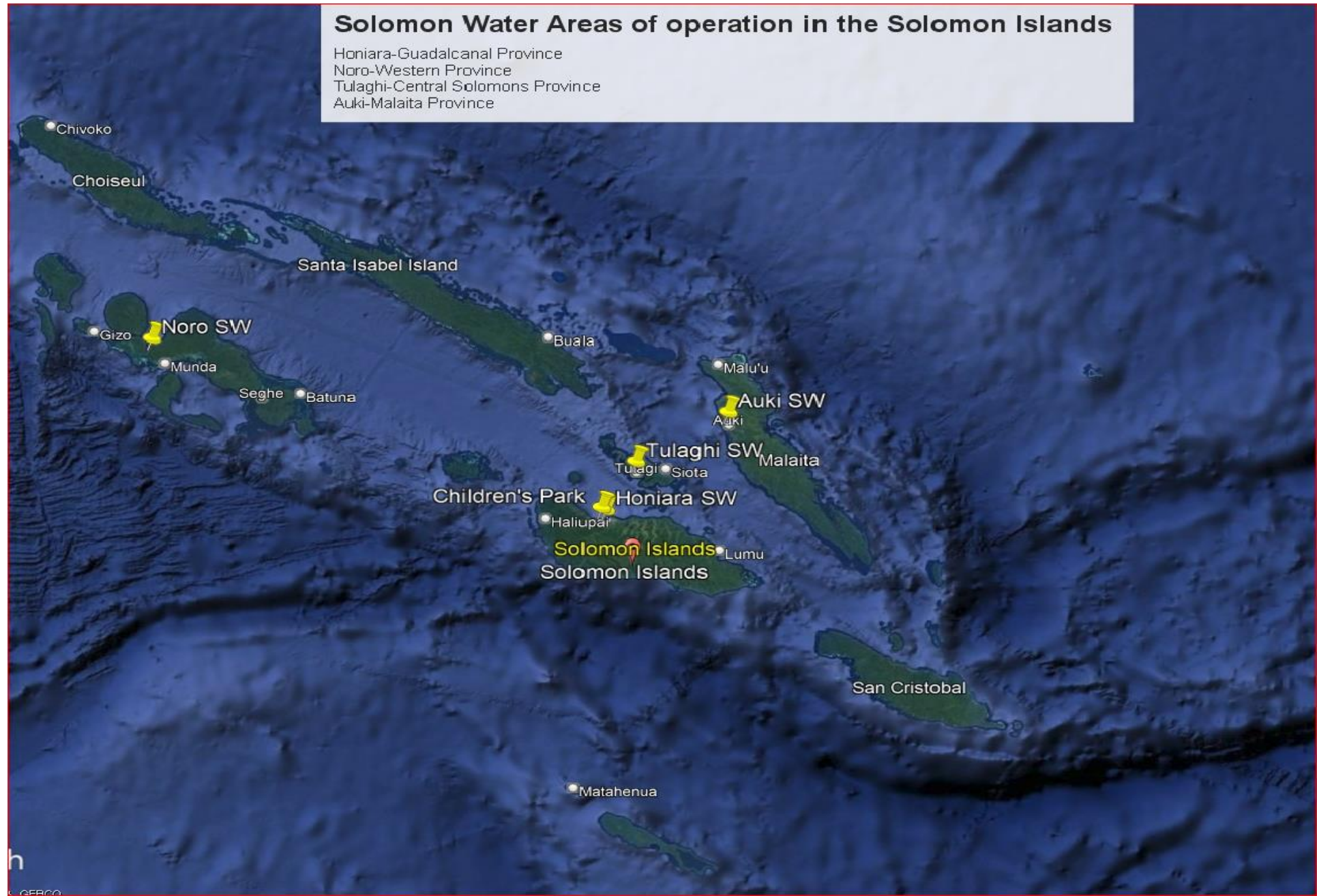


Purpose of the WASH TA interventions are:

- **Promote improved handwashing practices for Solomon Water customers and Solomon Islanders as a whole.**
- Develop communication campaign materials for a **National Handwashing campaign** as well as general WASH improvements
- To deliver and evaluate WASH Training in Provincial centres of in Auki, Tulagi and Noro, integrating information on other health topics
- To **strengthen working partnerships** between Solomon Water, customers, NGOs and Ministry of Health and Medical Services (MHMS)



Areas of operation



Feel Fresh & Clean Campaign

- Face-to-face awareness with women's church groups
- Global Hand Washing Celebrations
- Radio Hand Washing jingle
- Social media
- Billboards

The Campaign illustrates washing of hands at critical times:

1. Washing hands before, during & after preparing food
2. After coughing & sneezing
3. Before eating
4. After using toilet
5. After touching animals



Provincial WASH Training & Evaluation

Training Dates & Locations

Location	Date (2025)	Men	Women	Total	No. of Trainings
Tulagi	24 - 28 March	41	23	64	2 groups
Auki	29 April – 6 May	42	53	95	3 groups
Noro	10 – 17 June	27	43	70	3 groups
Total				229	8 groups



WASH Training Objectives for SW Customers

1) Help Solomon Water customers know basic information on:

- ✓ Water saving tips
- ✓ Water storage
- ✓ Simple Household Water Treatment
- ✓ Water Source protection
- ✓ Sanitation
- ✓ Hygiene
- ✓ Leak detection & reporting
- ✓ Know how to pay your bills



2) Share information on other topics, including from MHMS staff:

- ✓ Urban WASH (includes Personal & Environmental Hygiene)
- ✓ Urban Waste Management
- ✓ Healthy Village setting
- ✓ Non Communicable Diseases (NCDs)
- ✓ Pest Control

Hand Washing Campaign Monitoring & Evaluation

Monitoring & Evaluation Process

- 1 Day Focus Group Discussion Workshop (with separate male & female groups)
- Customer survey (walk in customers at each Provincial SW office)

The Evaluation objectives were to assess the effectiveness of the WASH training for:

1. Knowledge retention
2. Usefulness of the training
3. Behavior Change
4. Feedback



Provincial Solomon Water Customer WASH Survey

- For the Walk-in customers
- To get feedback on Solomon Water Customer Care
- To find out their knowledge on Solomon Water customer obligations and issues and challenges they are facing with the utility water services
- To find out their level of knowledge on WASH
- To find out about sanitation and handwashing facilities used in their homes

Walk-in Customer WASH Survey (Auki)

Auki: 37 respondents (15 women, 22 men)

Tulagi: 16 respondents (10 women, 6 men)

Noro: 14 respondents (4 women, 10 men)

Participant feedback on Training

Bill Payment

"Now I am up to date with my bill payments in order to avoid water disconnection, and now I am confident in double-checking my bill calculation when an invoice is received from the SW office."

Water Conservation

"I was guilty during the training because of the unwise use of water, and my bill was high. Now I can read the meter and pay my water bills according to the payment plan. Everything in the training was useful for me."

Leak Reporting

"[I apply training] by reporting the leaks around my community and the burst pipes"

Sharing messages

"I'm confident in advising other household members to always use water wisely."

"We train our kids from school to use water wisely, and we use rainwater as well to reduce our water bills."

Fix Leaks and Pay Bill

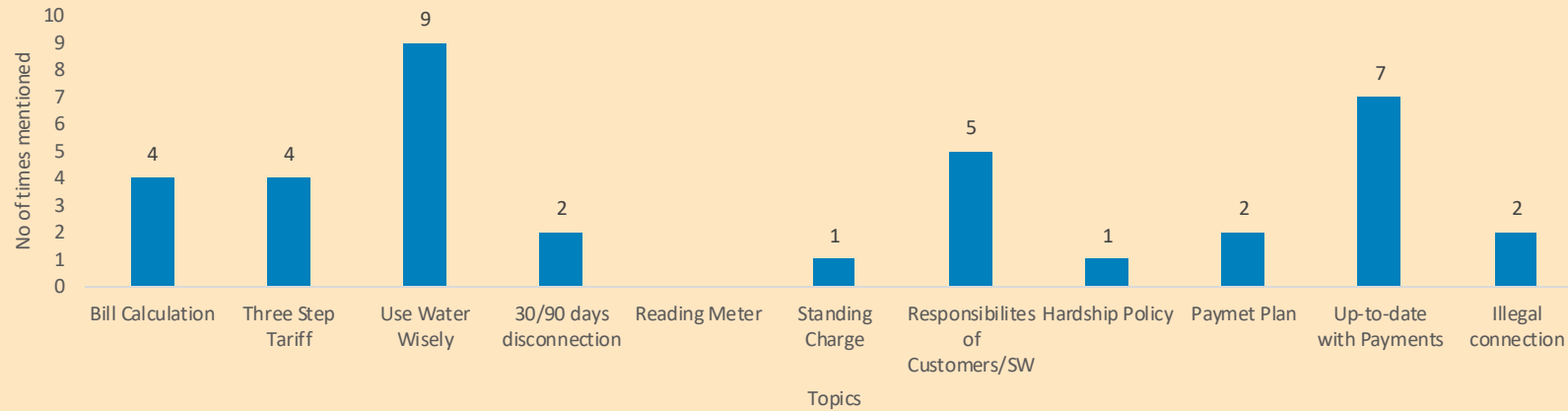
I apply what I learn from the training by fixing the leaks I have at my house to reduce water usage and to control my bill.

Manage connection

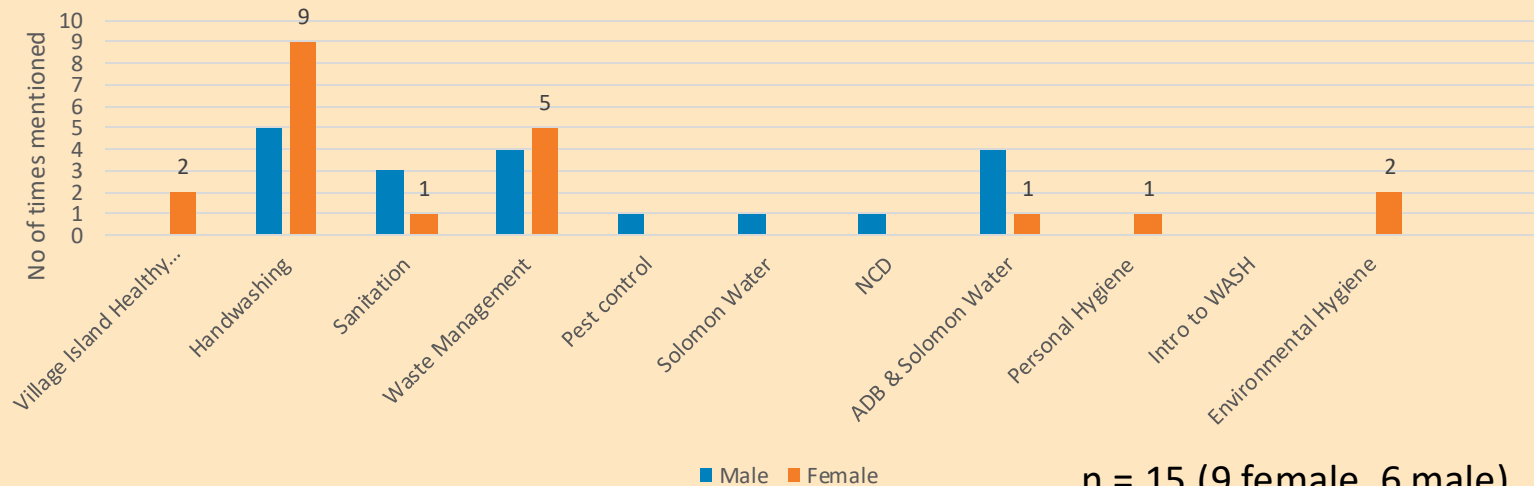
"Thank you, Solomon Water, for the training. Now I know how to read my water meter, bills, and how to control the use of water."

Evaluation Focus Discussion Group feedback - Auki

Topics recalled by respondents during the Solomon Water training



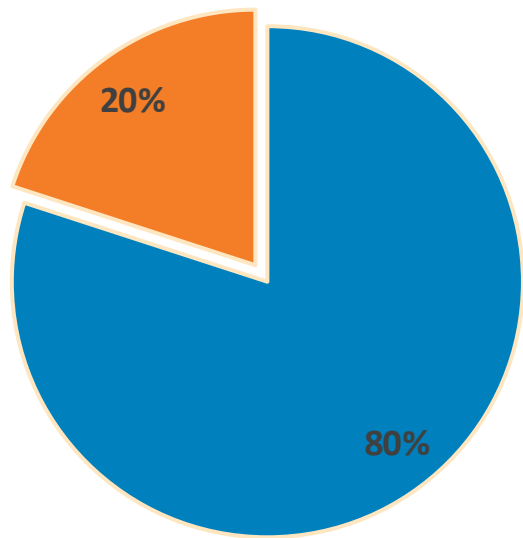
Topics that the respondents recalled during the training by gender



n = 15 (9 female, 6 male)

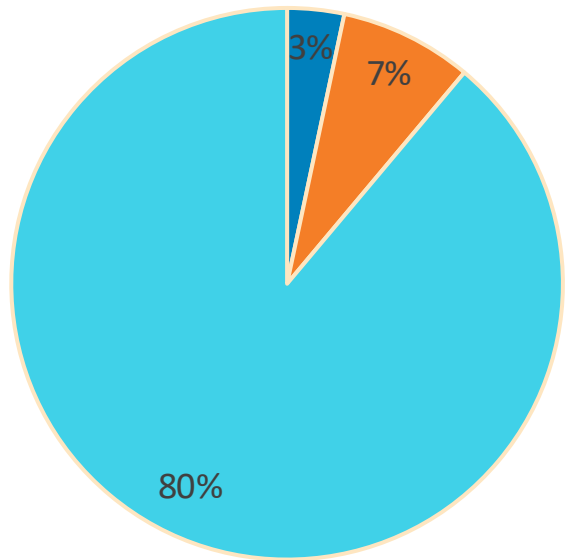
Evaluation Focus Discussion Group feedback - Auki

Respondents' views of how usefulness of Solomon Water training on Billing & Debt Recovery



■ Useful ■ Somewhat useful

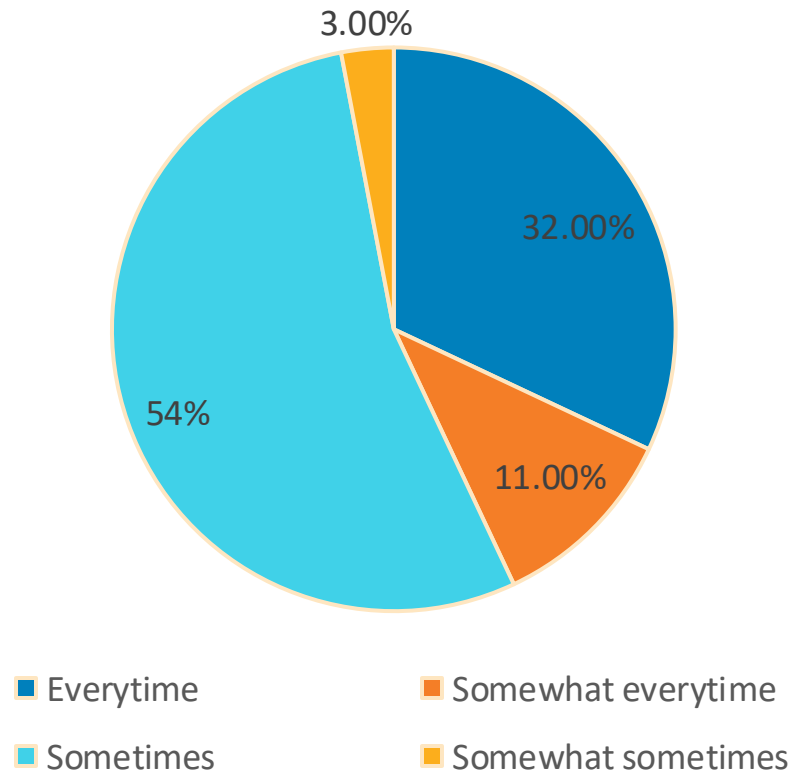
Motivation level of respondents to apply knowledge after the WASH training



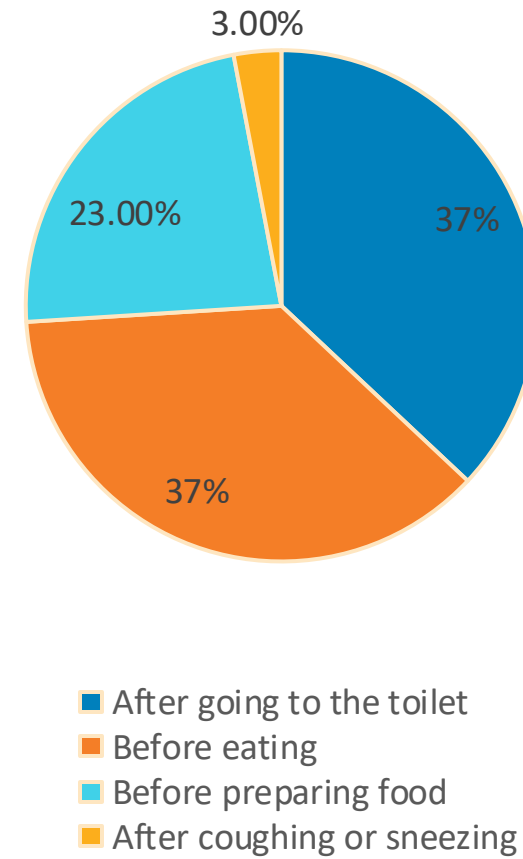
■ Somewhat unmotivated ■ Somewhat Motivated ■ Motivated

Results for Walk-in Customer WASH survey

Respondents' rates of washing hands with soap and water at critical times



Respondents' knowledge of critical times to wash hands with soap and water

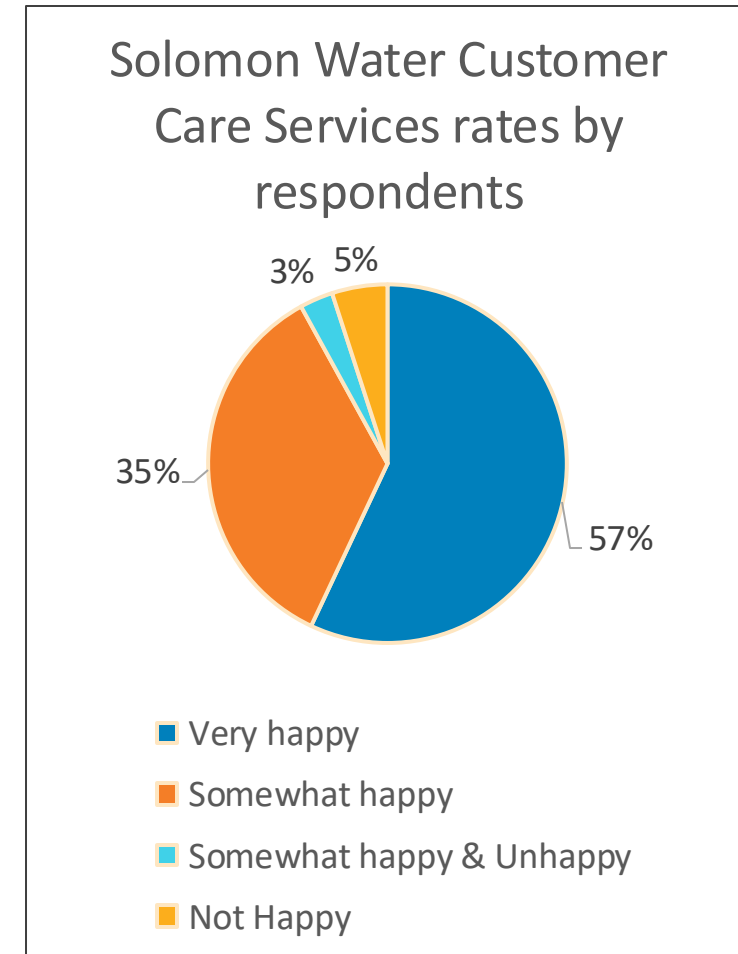


Results for Walk-in Customer WASH survey

Key lessons learnt

From the customer survey:

- Customers have basic knowledge of hand washing but do not consistently practice good handwashing
- Customers do not have hand basins near the toilet
- Customer engagement is important & consistent training will help Solomon Water customer relations
- Customers still need more and clear information on their roles & responsibilities and as well Solomon Water responsibilities





Thank you!



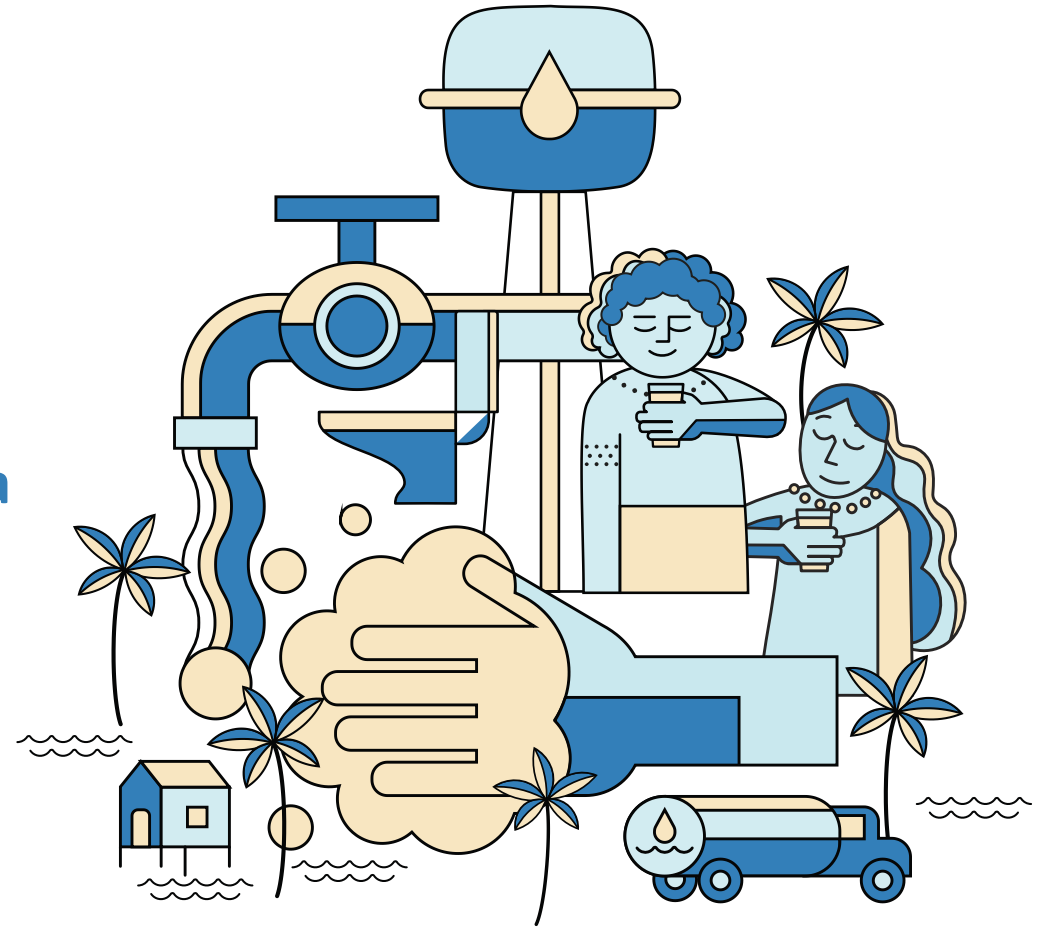
Water Safety Planning at Tonga Water Board

Advancing WASH Resilience in Nuku'alofa



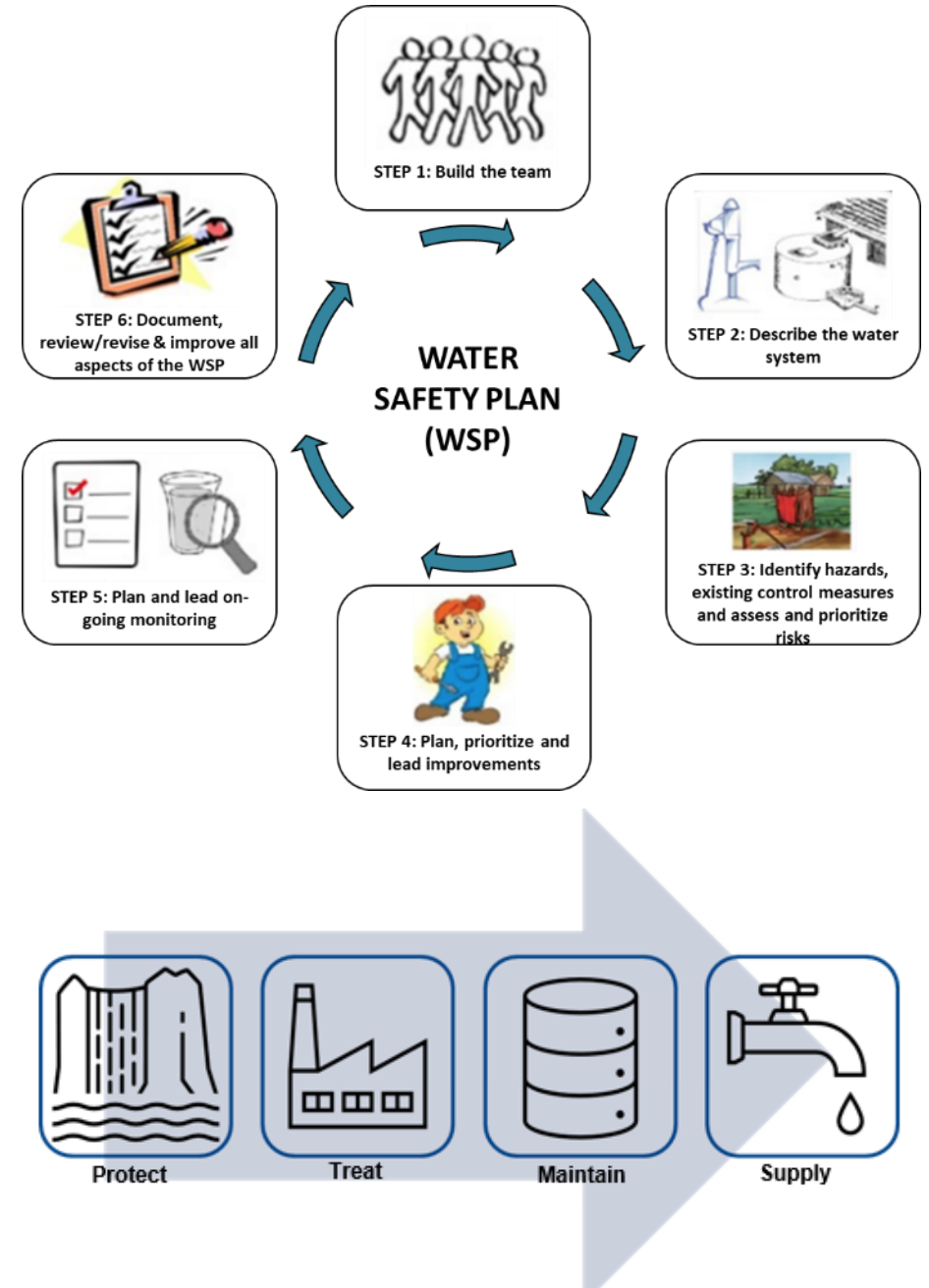
Lopeti Tufui

Principal Hydrogeologist
Tonga Water Board



The World Health Organization advocates a proactive and preventive approach to the management of water supply systems.

“Failure to ensure drinking-water safety may expose the community to the risk of outbreaks of intestinal and other infectious diseases” (WHO 2022)



TWB Water Safety Plans

1. Nuku'alofa draft completed (Nuku'alofa Water Safety Plan)
2. System specific plans required for
 1. 'Eua ('Ohonua)
 2. Ha'apai (Pangai)
 3. Vava'u (Neiafu)



Nuku'alofa Water Supply System



Nuku'alofa WSP Scope



Tonga Water Board

Within Tonga Water Boards (TWB)
Water Safety Plan (WSP) Scope



TWB WSP Scope

- Groundwater quality and protection
- Bore and pump systems
- Storage and distribution systems
- Chlorine treatment

Outside WSD WSP Scope



Private
Bores



Consumer's
Systems /
Plumbing



Household
Rainwater
Collection



Hospital
Internal
Plumbing

Nuku'alofa Risk Assessment Team and Workshops

Date	Attendee	Organisation
05-May-2023	Lopeti Tufui	TWB
	Dean Taylor	Hunter H2O/ADB
	Lisa Proctor	Hunter H2O/ADB
	Quddus Fielea	TWB
	Elisiva Tapueluelu	TWB
13-November-2023	Selina Lekeleka	TWB
	Lesieli Mahe	Ministry of Health
	Tukia Lepa	Ministry of MEIDECC – Environment
	Vea 'Aniseko	National Disaster Risk Management Office (NDRMO)
		Ministry of MEIDECC – Climate Change
		Met Services
		Ministry of Agriculture, Food and Forests
		Prime Minister's Office – Planning Department
	Penikolo Vailea	Ministry of Lands, Survey and Natural Resources (MLSNR)
	Rennie Vaiomo'unga	Geology Survey Unit
	Lola Liava'a	Waste Authority Limited (WAL)
		Ministry of Public Enterprise
	Bronwyn Powell	Asian Development Bank
14-November-2023	Lopeti Tufui	TWB
	Dean Taylor	Hunter H2O/ADB
	Lisa Proctor	Hunter H2O/ADB
	Quddus Fielea	TWB
	Elisiva Tapueluelu	TWB

WSP Risk Assessment Rating

NUMERICAL RISK	Consequence	1	2	3	4	5
Likelihood		Insignificant	Minor	Moderate	Major	Catastrophic
1	Rare	1	2	3	4	5
2	Unlikely	2	4	6	8	10
3	Possible	3	6	9	12	15
4	Likely	4	8	12	16	20
5	Almost Certain	5	10	15	20	25

Risk Outcome	Risk Score	Description of Outcome
Extreme/ Urgent Risk	25 to 16	Never safe to proceed. Further preventative control measures are required. Highest priority projects required for immediate commencement.
High Risk	15 to 12	Not safe to proceed. Further preventative control measures are required.
Moderate Risk	10 to 5	If ongoing review and caution are implemented, it is safe to proceed with task. Control measures are adequate, review for opportunities to improve risk level.
Low Risk	4 to 1	Safe to proceed with task and controls are deemed adequate. Ensure ongoing monitoring to identify changes controls.

WSP Risk Assessment Outcomes

		2023 - Mitigated Risk Level and Number of Risks			
Risk Profiling	Total Risk	Extreme	High	Moderate	Low
Risk Number is greater than:		15	10	4	0
Catchment	14	0	4	9	1
Storage Tanks	7		2	3	2
Treatment plant	3	2	0	1	0
Distribution/Customers	8	0	3	5	0
Other	3	0	3	0	0
TOTAL RISKS	35	2	12	18	3

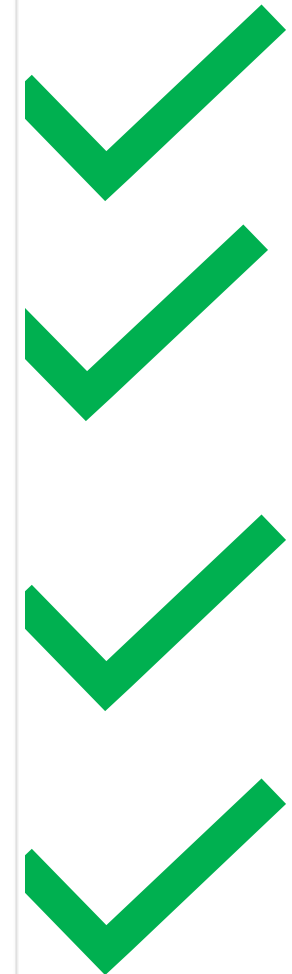
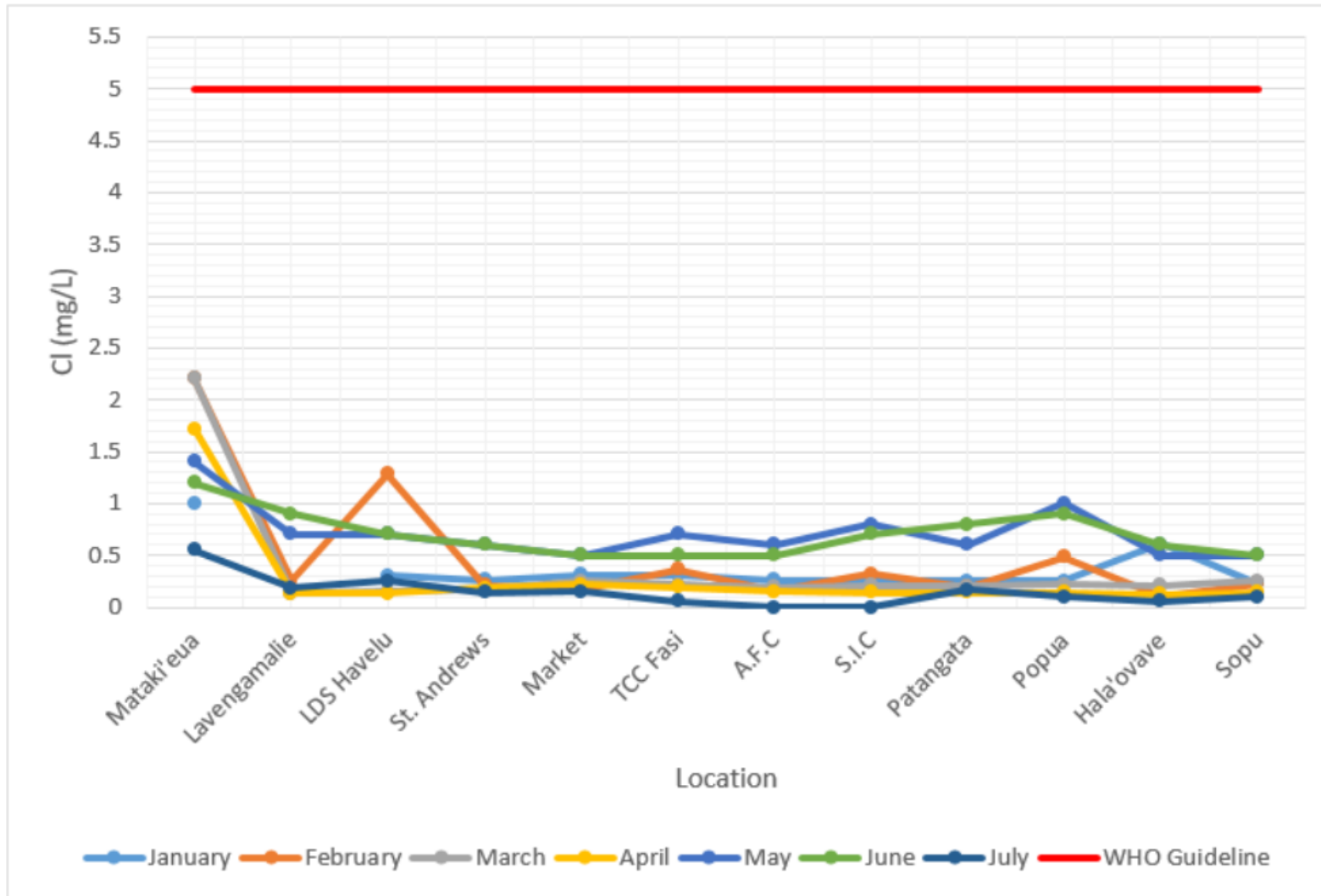
Water Safety Risks Identified

1. Treatment Plant Risk – failure to dose chlorine tablets into the storage reservoirs.
2. Treatment Plant Risk – the automatic chlorine dosing location does not provide adequate chlorine contact time.
3. Treatment Plant Risk – TWB should order drinking compatible calcium hypochlorite tablets.
4. Treatment Plant Risk – Standardise laboratory test procedures.

Operationalizing the WSP

1. Set up the new water testing laboratory with new instrumentation. ✓
2. Regularly (daily to weekly) update the water quality spreadsheet with the latest data. ✓
3. Allocate responsibility to a person to regularly check the samples. ✓
4. Incorporate regularly review their water quality data and operations into existing business systems. ✓
5. Keep the operations team up to date on their responsibilities. ✓
6. Involve the important stakeholders in the safety planning initiatives. ✓
7. Integrate updating the water safety plan in normal business processes. ✓

Water Safety Risks Identified and Addressed



Path Forward

1. Complete the approval process for the Nuku'alofa WSP.
2. Implement controls to mitigate the urgent risk areas.
3. Training.
- 4. Complete WSP for remaining systems.**

Get tested!

TWB Laboratory Test Parameters



Test Parameters	Method Type	Unit
Microbiological		
e. coli	Filtration and incubation	cfu/100mL
Faecal coliform	Filtration and incubation	cfu/100mL
Physical		
Conductivity	Conductivity by PC Electrode	$\mu\text{S}/\text{cm}$
Turbidity	Turbidity by PC Electrode	NTU
Total dissolved solids (TDS)	TDS by PC Electrode	mg/L
pH	pH by PC Electrode	pH
Non Metals		
Nitrate	Cadmium reduction method	mg/L
Phosphorus	Dissolved metals by UV-Vis (Ultraviolet-Visible)	mg/L
Free Chlorine	Colorimeter	mg/L
Total Chlorine	Colorimeter	mg/L
Ammonia	Dissolved metals by UV-Vis (Ultraviolet-Visible)	mg/L
Metal		
Aluminum	Aluminon method	mg/L
Iron	Complexometric titration	mg/L
Sodium	Major Cations - Dissolved	mg/L
Hardness	Complexometric titration	mg/L
Magnesium	Complexometric titration	mg/L
Calcium	Complexometric titration	mg/L
Heavy Metals		
Arsenic	Dissolved metals by UV-Vis (Ultraviolet-Visible)	mg/L
Lead	Dissolved metals by UV-Vis (Ultraviolet-Visible)	mg/L
Chromium	Dissolved metals by UV-Vis (Ultraviolet-Visible)	mg/L
Cadmium	Dissolved metals by UV-Vis (Ultraviolet-Visible)	$\mu\text{g}/\text{L}$
Cobalt & Nickel	Dissolved metals by UV-Vis (Ultraviolet-Visible)	$\mu\text{g}/\text{L}$
Copper	Dissolved metals by UV-Vis (Ultraviolet-Visible)	mg/L
Zinc	Dissolved metals by UV-Vis (Ultraviolet-Visible)	mg/L
Manganese	Dissolved metals by UV-Vis (Ultraviolet-Visible)	mg/L
Boron	Dissolved metals by UV-Vis (Ultraviolet-Visible)	mg/L

Asset Management Plan

Tonga Water Board Production System
GIS Team Critical Asset Condition Report: 02042025

1. Condition Assessment of Critical Asset

Only include assets rated "Poor" (4) or "Critical" (5).

Asset Type	Condition Rating*	Detailed Description of Condition	Impact on System	Maintenance Required	Urgency Level**	Photos Attached (Yes/No)	Pump Station
Pipe test	5	<ul style="list-style-type: none">- Non-functional,- Severe rust- Leaking	Leakage causes muddy and dirty floor, salt built ups	Yes	[Immediate]	[Yes]	<ul style="list-style-type: none">- 1- 3- 6- 11- 13- 102- 106- 120- 131- 132
Pipe test	4	<ul style="list-style-type: none">- Limited functionality- Severe rust	Salt built ups, muddy floor of pump house	[Yes]	[High]	[No]	<ul style="list-style-type: none">- 7- 107- 108- 214- 215
Pressure gauge	5	<ul style="list-style-type: none">- Non-functional,- Fully rusted	Can't record pressure	[Yes]	[Immediate]	[Yes]	<ul style="list-style-type: none">- 106- 108- 117- 120
Pressure gauge	4	<ul style="list-style-type: none">- Severe rust- Limited functionality	Cannot monitor and control pressure properly	[Yes]	[High]	[No]	<ul style="list-style-type: none">- 3- 11- 103- 109



PS-1



PS-3



PS-6



PS-11



Hut/Condition Rating 5



PS-213



PS-104



PS-116



PS-215

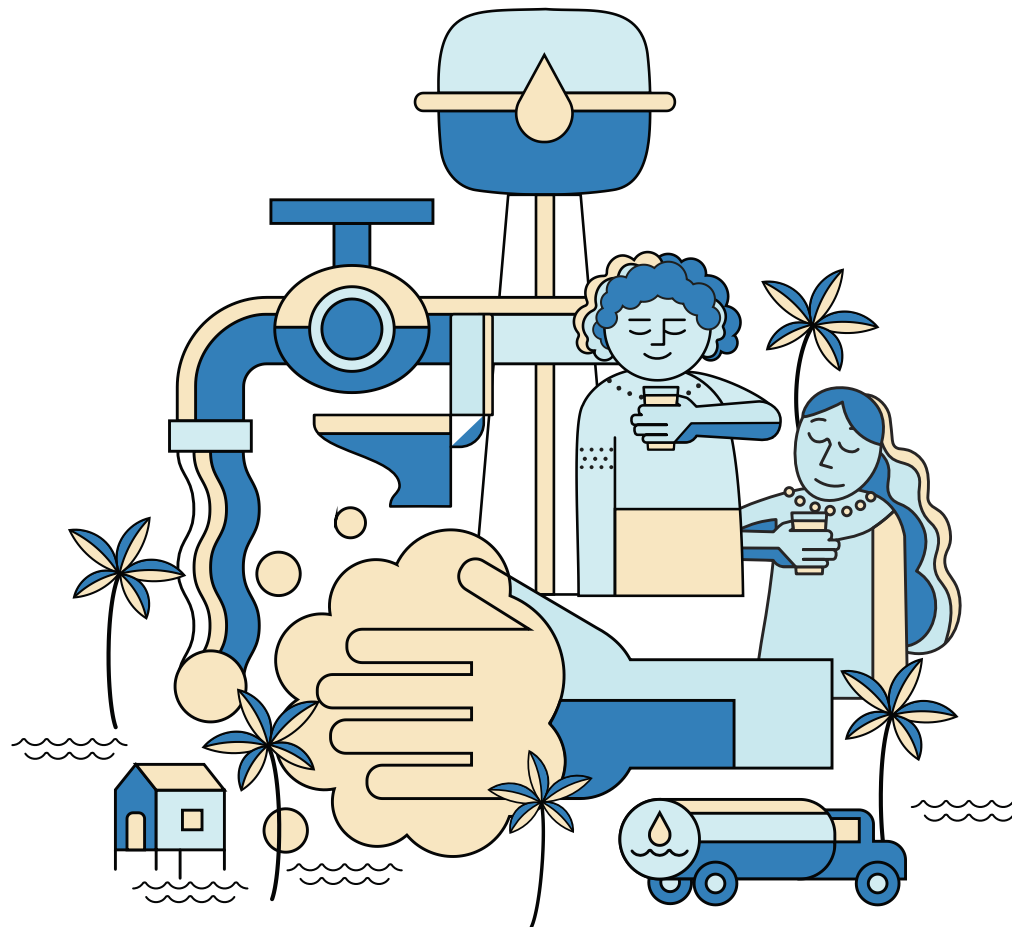


RESERVOIR 3



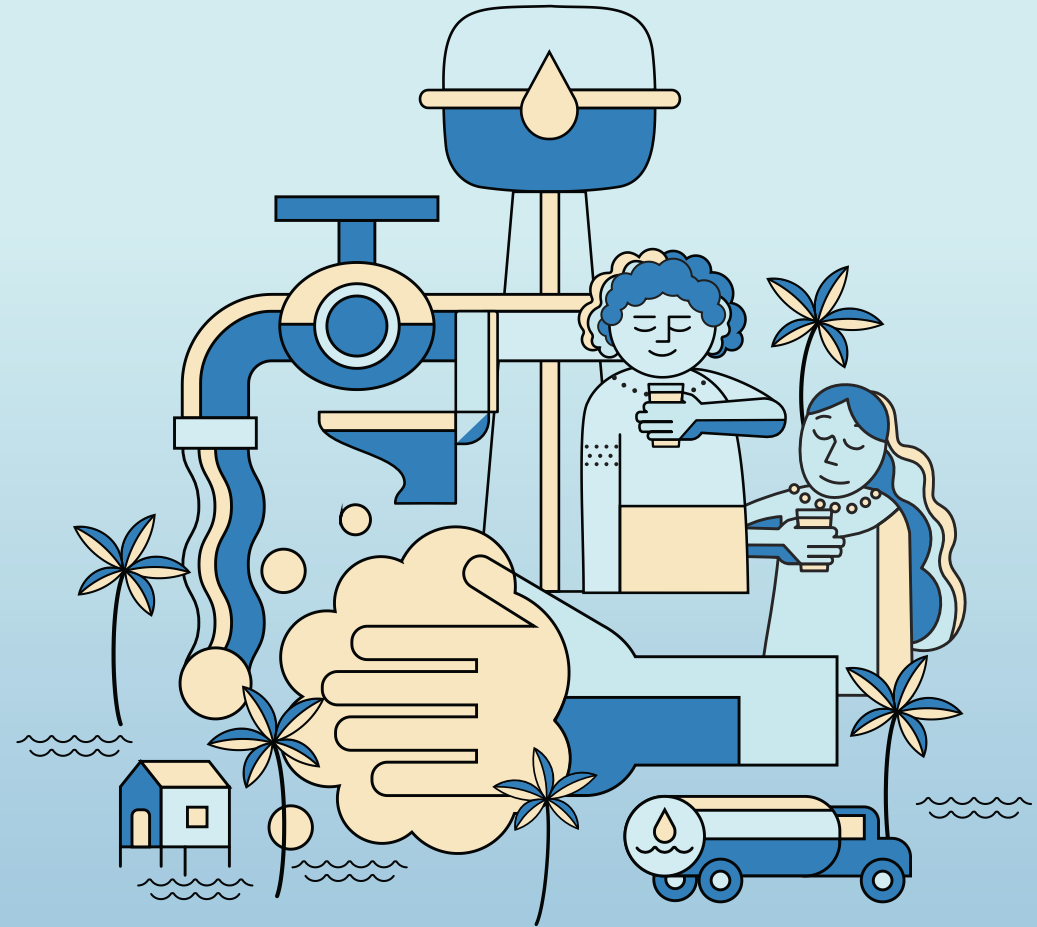
RESERVOIR 4

Malo 'aupito!



Poll

1. Did today's webinar expand your knowledge/skills on the topic discussed?
2. Did you learn something in today's webinar that you can use in your work?



Thanks for Watching

This and other Pacific WASH webinar recordings available online:

<https://events.development.asia/learning-events/pacific-wash-webinars>

