

Scaling Water Safety Plans to Fit Small and Under-Resourced Systems

FEBRUARY 3, 2026



ROADMAP

Introduction & Polls

Lightning Talks (x4)

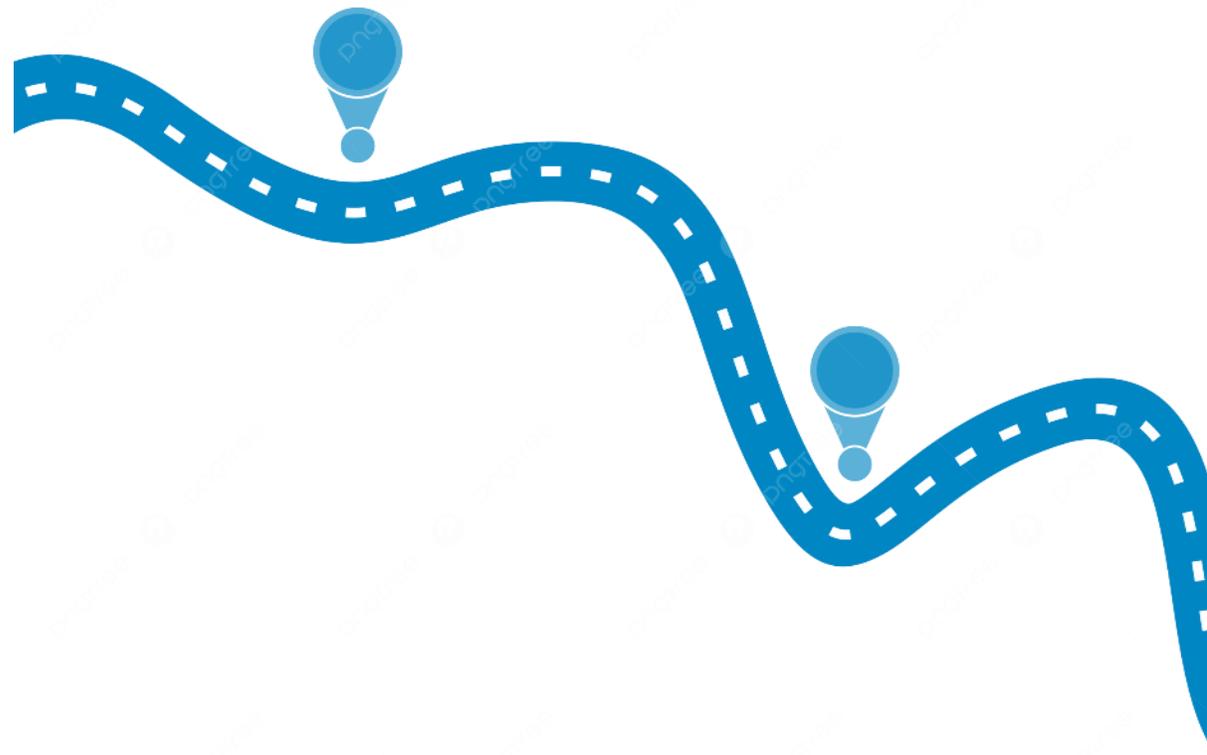
Repeat Poll

Panel Discussion

Share-Out Exercise

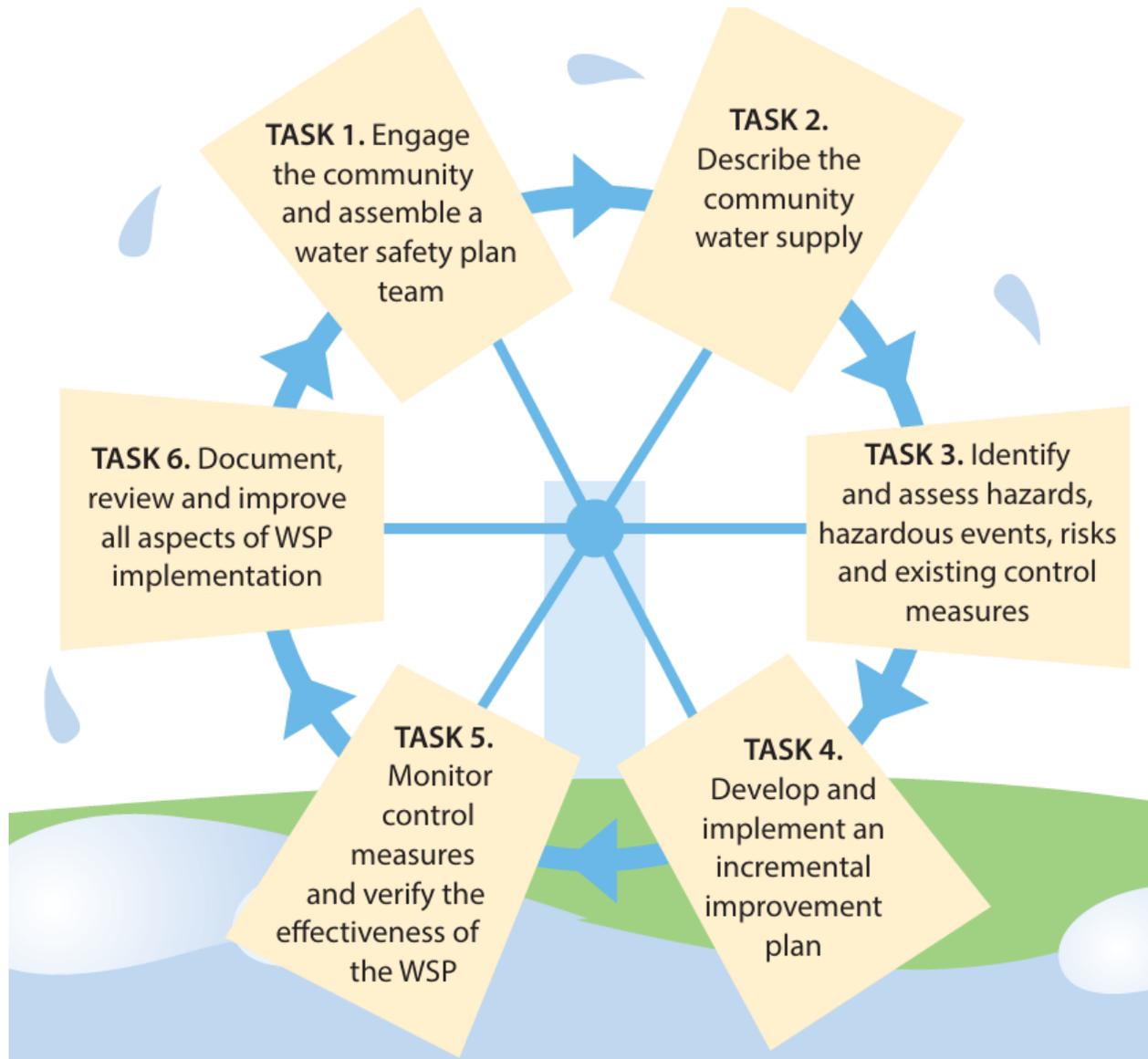
Audience Q&A

Wrap Up & Next Steps



POLL #1: WHERE ARE YOU JOINING FROM?

WHAT IS A WATER SAFETY PLAN (WSP)?



WHO, 2014 Field Guide

“A proactive risk assessment and risk management approach encompassing the entire drinking-water supply from catchment to consumer”

Task 6 (2024 Guidelines) →

6. Carry out operations and plan for emergencies. Embed the WSP into day-to-day operations and maintenance tasks and prepare emergency response plans.

7. Review and improve all aspects of WSP implementation.

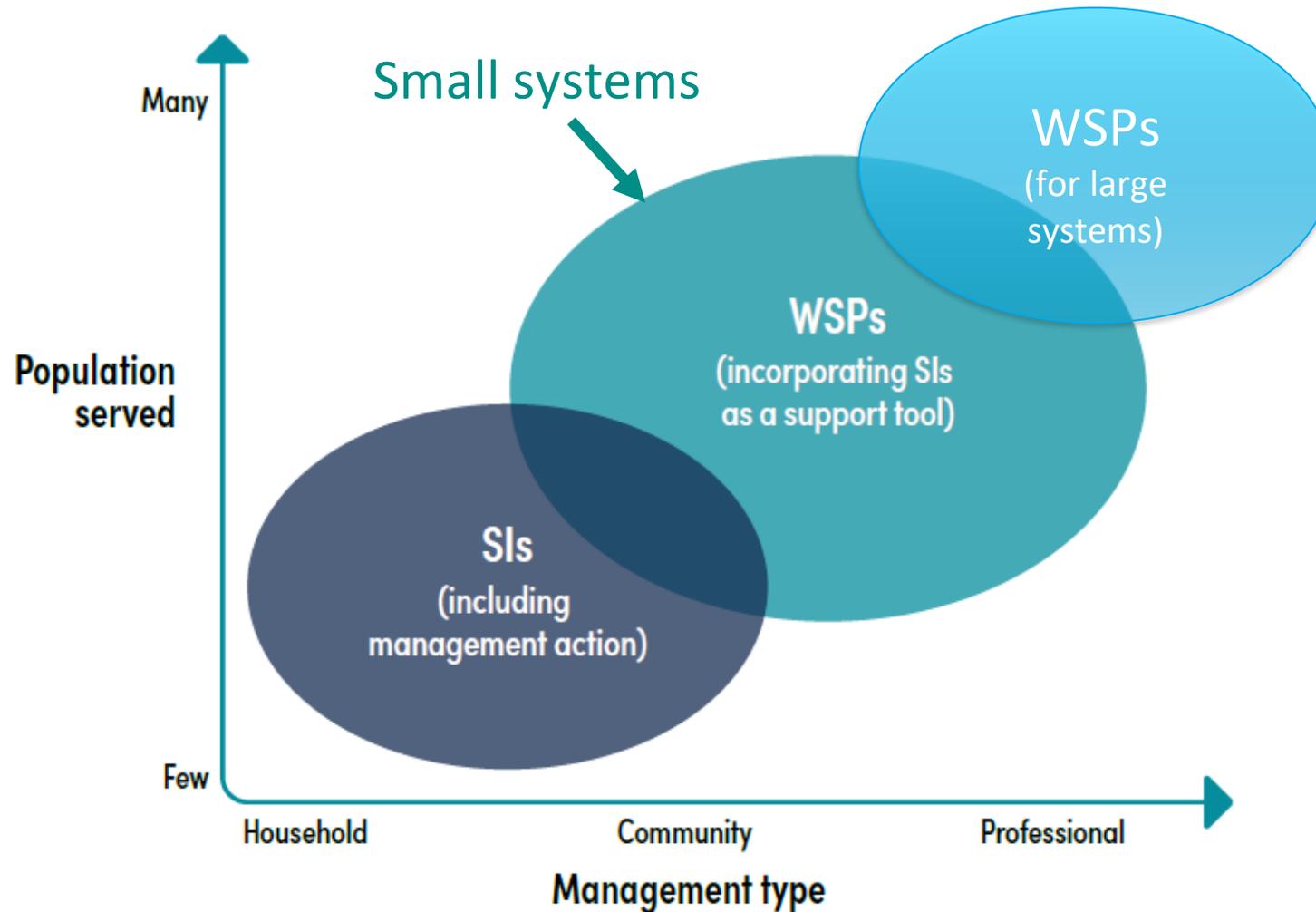
WHAT IS A SMALL OR UNDER-RESOURCED SYSTEM?

“Although the definition of a small community water supply can vary widely within and between countries, it is the **operating and management challenges** they face that most commonly set small community water supplies apart.”

- WHO, 2012 Manual

- Operators may be faced with:
 - Limited access to **expert assistance**, because supplies are often isolated and/or remote
 - Limited **management and technical support** from government agencies
 - Limited and inconsistent **financial resources** to invest in improvements and repairs

WHAT IS A SMALL OR UNDER-RESOURCED SYSTEM?



WHO, 2024 Guidelines

**POLL #2:
WHAT DO YOU THINK ARE
THE PRIMARY BARRIERS
TO WSP IMPLEMENTATION
IN SMALL AND UNDER-RESOURCED SYSTEMS?**

HOUSEKEEPING ANNOUNCEMENTS

- Please **submit questions** at any time using the Q&A tab in Zoom
 - Some will be answered live
- Please let us know via the chat if you are having any technical difficulties
- Please stay engaged after the webinar!



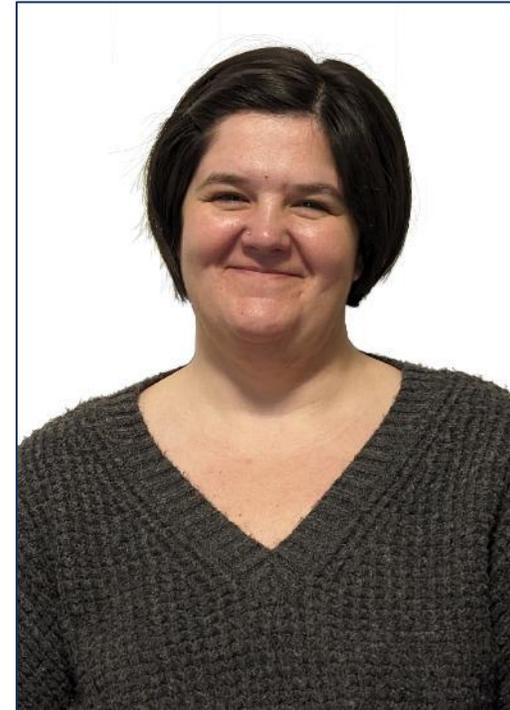
LIGHTNING TALKS



1ST LIGHTNING TALK: TRAVIS DYMENT & MEGAN FULLER



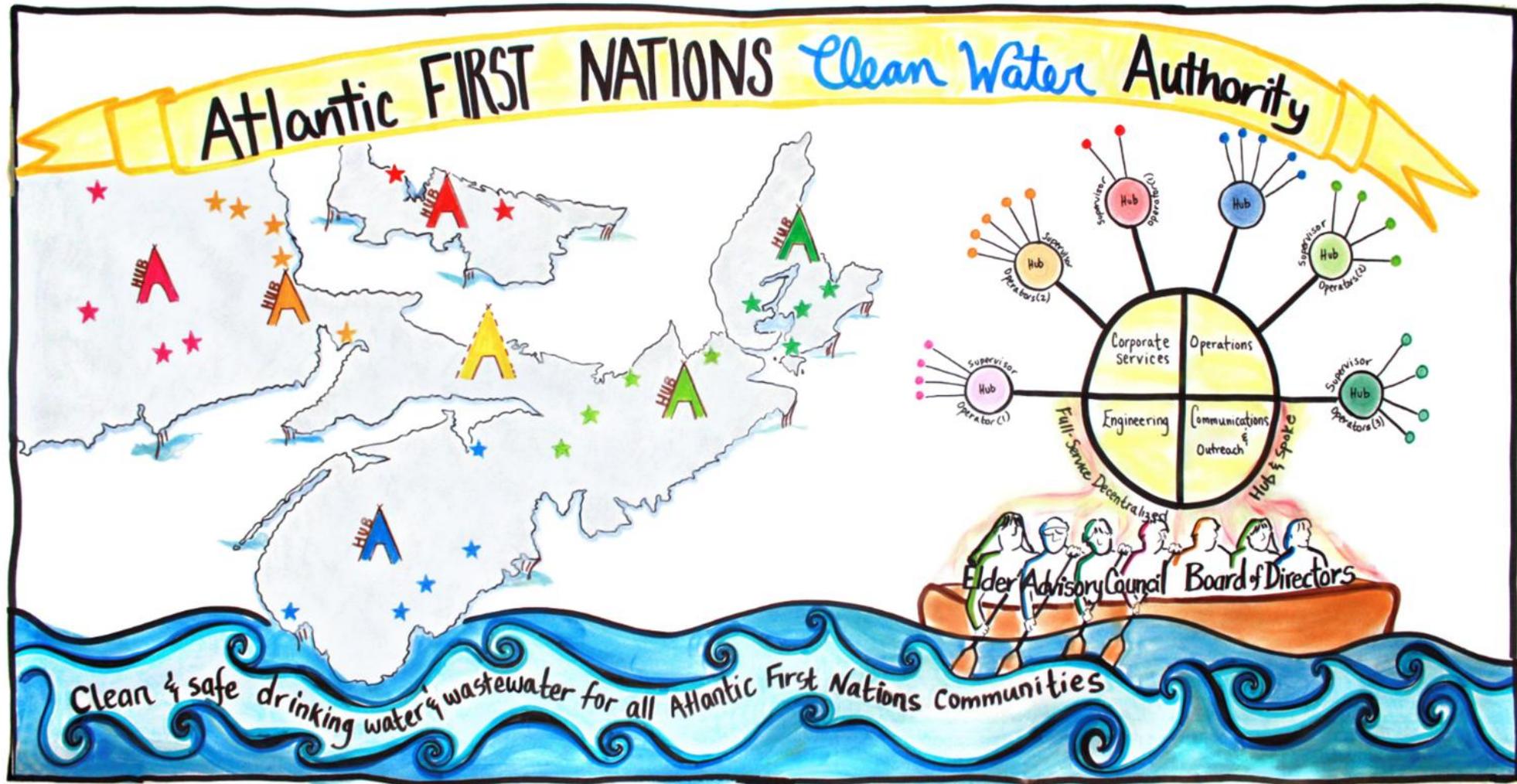
Supervisor, Atlantic First Nations Water Authority, Canada



Director of Research, Atlantic First Nations Water Authority and Dalhousie University Centre for Water Resources Studies



1ST LIGHTNING TALK: BACKGROUND



1ST LIGHTNING TALK: BARRIERS OVERCOME



Indigenous

Delayed introduction of First Nations clean water bill 'unacceptable,' say chiefs

Some First Nations leaders concerned Liberals intend to weaken proposed legislation in key areas

[Brett Forester](#) · CBC News · Posted: Dec 03, 2025 3:23 PM AST | Last Updated: December 3, 2025

No legislation regarding drinking water quality in First Nations

Politics

Federal government falling short on funding to help First Nations operate water systems, PBO says

The budget officer estimates Ottawa should be spend \$138 million more annually

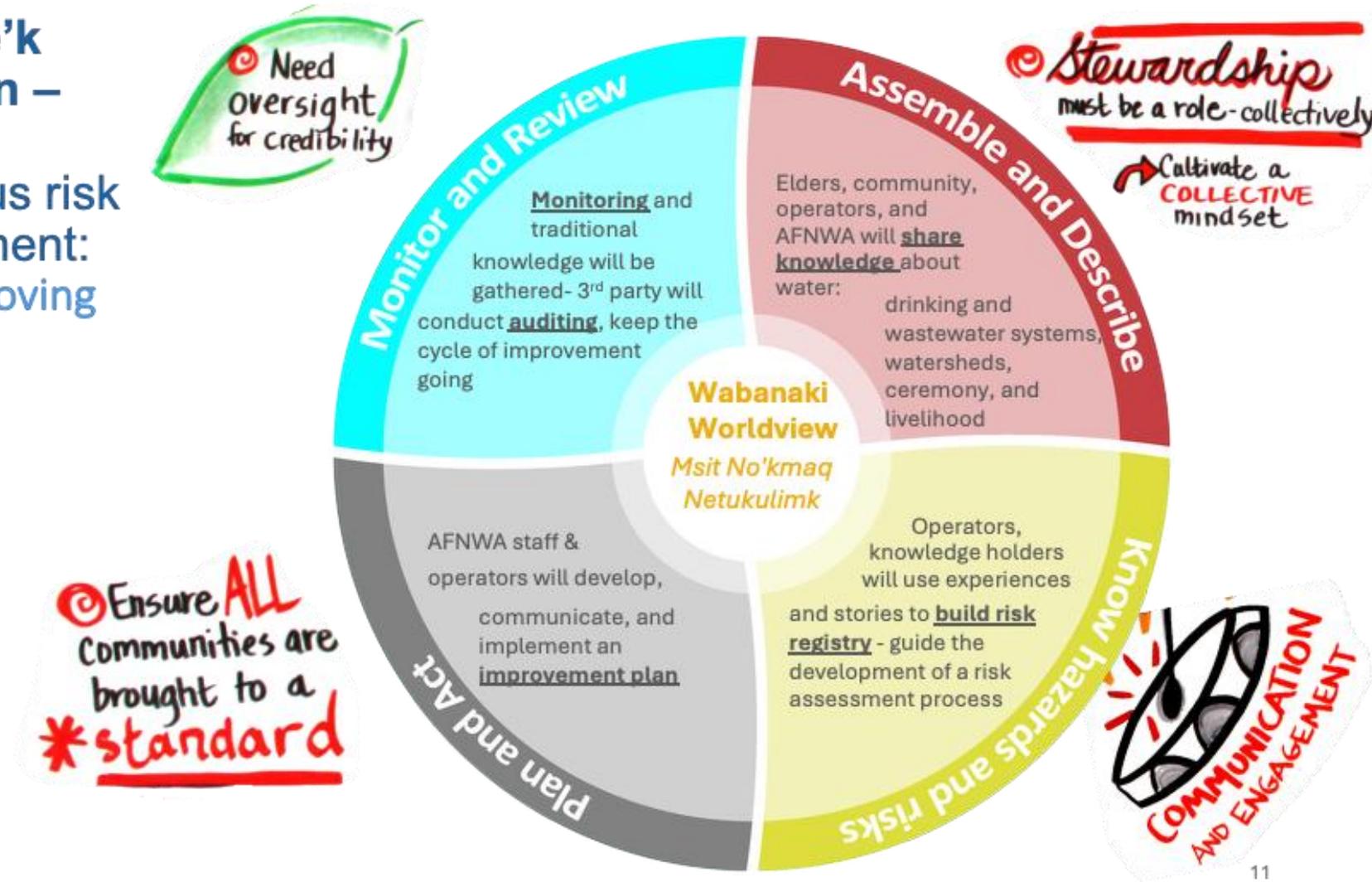
The Canadian Press · Posted: Dec 01, 2021 12:38 PM AST | Last Updated: December 1, 2021

Inadequate funding to design, maintain, operate systems

1ST LIGHTNING TALK: UNIQUE STRATEGIES

Nujo'tme'k
Samqwan –

Indigenous risk
management:
Keep improving



1ST LIGHTNING TALK: PENDING NEEDS & PRACTICAL APPROACHES



- The AFNWA is a one-of-a-kind Indigenous utility that is nearly 3 years old
- It has taken over full responsibility for 13 water and wastewater systems, many under designed and poorly maintained
- Operations staff are undergoing rapid and persistent changes
- Informal risk assessments are ongoing
- A practical approach for formal risk assessments and mitigation actions needs to be developed and implemented, led by the operations staff
- Building buy-in to prioritize this work is slow in an unregulated environment!

[AFNWA.CA](https://www.afnwa.ca) to learn more about our journey!!

2ND LIGHTNING TALK: ALEJANDRO IRIBURO

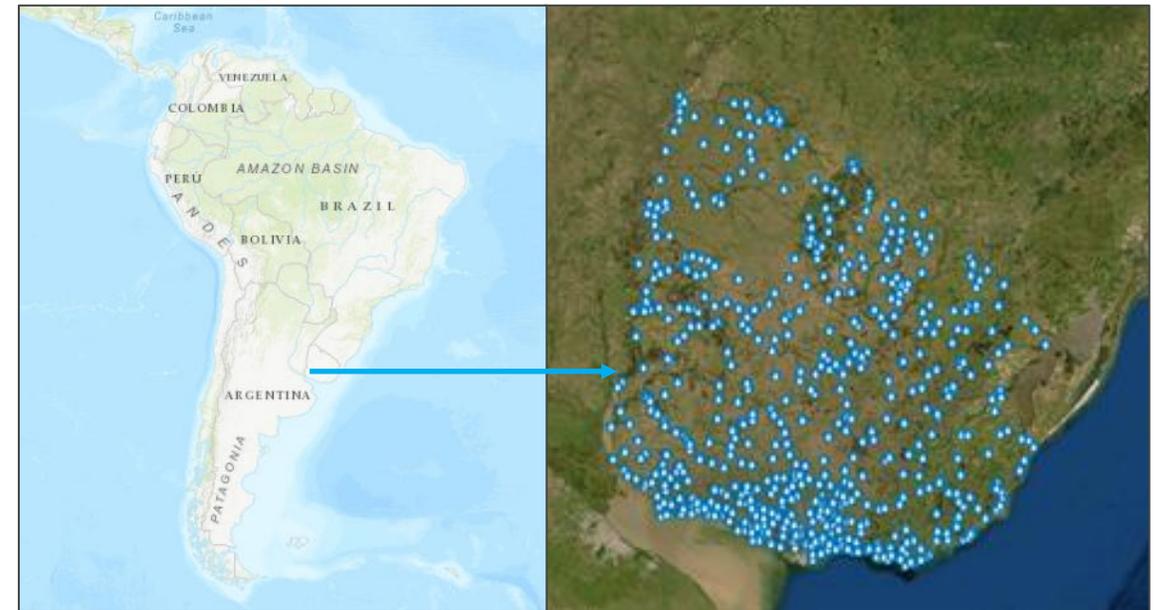


**Drinking Water Assistant Manager,
OSE Uruguay**



2ND LIGHTNING TALK: BACKGROUND

- Located in South America, Uruguay covers an area of 176,220 km² and has a population of 3.44 million inhabitants, with 99.1% urban drinking water supply coverage.
- The supply is in charge of the Water and Sanitation utility OSE, which manages almost 570 water supply systems (WSS) of which 90% have less than 5,000 inhabitants and **50% have less than 100 inhabitants**. Small systems include Rural Schools and Small Rural Towns.



Images: South América (left), Water Supply Systems managed by OSE (right), source GIS OSE.

2ND LIGHTNING TALK: BACKGROUND

- In 2008, at the initiative of OSE, a specific program for the supply of drinking water to small villages in rural areas and rural schools (PPLER)
- More than 300 rural schools (5–60 students) and their surrounding villages (represents 33% of the all of the rural schools)
- Approximately 6K homes and 20K inhabitants
- Duplicate existing water systems achieving sustainability over time, which translates into monitoring, supervision of water quality, as well as the operation and maintenance of installed infrastructure



2ND LIGHTNING TALK: BARRIERS OVERCOME

STAGES IN THE IMPLEMENTATION OF WSP IN OSE



2006-2011

- Learn
- Raise awareness
- Encourage adoption

2012-2017

- Voluntary Implementation
- Workshops/international specialists

2018 – to date

- Mandatory Implementation
- Water Safety Plan Regulation (URSEA 2018) – demands preparation of documents for the implementation of WSP in systems of less than 2,000 inhabitants



Seminario

Elaboración
e Implementación
de Planes
de Seguridad
de agua

CONFERENCISTAS:

Prof. Dr. Ing. José Vieira
(Universidad de Minho / Portugal)

Ing. Carla Morais
(Aguas do Noreste / Portugal)

28 y 29

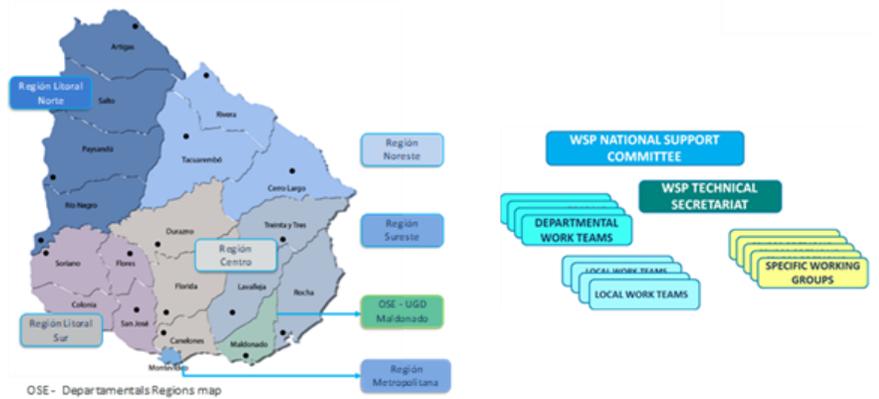
de Febrero de 2012

Montevideo

Hotel Escuela Kolping
Bvar. Artigas 2714

2ND LIGHTNING TALK: UNIQUE STRATEGIES

Structure adopted for the development of WSP



AGR - Aplicación de Gestión de Recursos

[Comprimir toda la estructura](#)

- [-] Sistemas de Abastecimiento de Agua (Tipo de Sistema - Rec:175)
 - [-] Carmelo (Unidad Abastecimiento de Agua Potable - Rec:3280)
 - [-] Colonia (Unidad Abastecimiento de Agua Potable - Rec:3277)
 - [-] Colonia (Sistema - Rec:3297)
 - [-] Estanzuela (Sistema - Rec:3301)
 - [-] La Horqueta-Escuela79 (Sistema - Pequeñas Localidades - Rec:11266)
 - [-] D: La Horqueta I: ER 79 (Perforación - Rec:25970)
 - [-] Escuela N°79 - Caseta B30 - Agua tratada Filtros (Punto de Extracción - Punto de Tratamiento - Rec:25151 - Zona:19210 - Tipo:P - PTPE)
 - [-] Perforacion Escuela 79- Bruta (Punto de Extracción - Punto de Fuente - Rec:7660 - Zona:14296 - Tipo:P - PFPB)
 - [-] La Horqueta/Escuela N° 79 (PPLER - Rec:7935)
 - [-] Filtro de Adsorción La Horqueta (Unidad de Potabilización - Filtro de adsorción - Rec:25145)
 - [-] Laguna de los Patos/Esc. N°20 (Sistema - Pequeñas Localidades - Rec:3335)
 - [-] Paraje Artilleros/Escuela N° 25 (Sistema - Pequeñas Localidades - Rec:3336)
 - [-] Paso Antolín (Sistema - Rec:3312)
 - [-] Paso Hospital/Esc. N°118 (Sistema - Pequeñas Localidades - Rec:3338)
 - [-] Puntas de San Pedro/Escuela N° 73 (Sistema - Pequeñas Localidades - Rec:7447)
 - [-] Riachuelo (Sistema - Rec:3315)
 - [-] San Pedro/ Escuela N°60 (Sistema - Pequeñas Localidades - Rec:8835)
 - [-] Tarariras (Sistema - Rec:3318)
 - [-] Personal de Colonia (Unidad Abastecimiento) (Plantilla de Personal - Rec:7156)
 - [-] Juan Lacaze (Unidad Abastecimiento de Agua Potable - Rec:3278)
 - [-] Nueva Helvecia (Unidad Abastecimiento de Agua Potable - Rec:3282)

OSE laboratory network

- Regional
- Environmental
- Regional & Environmental
- Metropolitan water quality
- ▲ Water Treatment Plant
- ▲ Wastewater treatment plant
- Central



2ND LIGHTNING TALK: PRACTICAL APPROACHES



the international water association

Datos del Recurso

Recurso Id	11266
Nombre	La Horqueta-Escuela79
Tipo	Sistema
Sub Tipo	Pequeñas Localidades
Estado General	Operativo
Estado Por Tipo	



Datos Básicos

Datos Básicos Informe INE Reclamos SGC GIS

Formularios

PSA

Documentos

Varios Planos de Red Documentos PSA Actas de reuniones

Acciones

Falta de Agua Incidentes calidad

Reportes

Ficha del Recurso Acciones Acciones-Medidas Acciones Pendientes Acciones con un Dato
 Cantidad de Recursos y Acciones Vínculos Informe E. Coli Informe de Cianobacterias Listado de Recursos
 Listado de Recursos 2 Caudal de Perforaciones Tuberías

Historia

Ver Historia



Volver						
Recurso	11266-La Horqueta-Escuela79					
Tipo de Documento	Documentos PSA					

Atención: Si el documento es muy grande puede tardar en aparecer la pantalla

	Nombre / Descripción	Código	Versión del Documento	Fecha de Aprobación	Archivo	Fecha de Agregado
✖	Índice Planes de Seguridad La Horqueta Escuela N°79	REGG.PSA.11	01	24/07/2025	REGG.PSA.11 Índice PSA La Horqueta.pdf	18/11/25 12:20
✖	Equipo de trabajo local La Horqueta Escuela N°79	REGG.PSA.03	01	01/07/2025	REGG.PSA.03 Equipo de trabajo local La Horqueta.pdf	18/11/25 12:35
✖	Manual PSA La Horqueta Escuela N°79	MN.PSA.01	01	01/07/2025	MN.PSA.01 Manual La Horqueta Escuela 79.pdf	18/11/25 12:37
✖	Matriz de Riesgos La Horqueta Escuela N°79	MR.PSA.01	01	01/07/2025	MR.PSA.01 Matriz de Riesgos La Horqueta Escuela 79.pdf	18/11/25 12:38
✖	Fichas de Gestion La Horqueta Escuela N°79	DOC.PSA.01	01	01/07/2025	DOC.PSA.01 Fichas de Gestion La Horqueta Escuela 79.pdf	18/11/25 12:39



Obras Sanitarias del Estado
Sistema La Horqueta Escuela N°79

Ficha de Gestión

DOC.PSA.01
Versión 01
Página 2 de 6

F - FUENTE		F1.1 Agua Subterránea				
MEDIDAS DE CONTROL						
Desinfección con hipoclorito. Perforación rodeada de una construcción elevada y cerrada. Camiones cisternas para llenado de tanque de distribución Inspección semanal del entorno de la perforación. Filtro de adsorción operativo en la perforación.						
MONITOREO OPERACIONAL						
¿QUÉ?	¿DÓNDE?	LÍMITE CRÍTICO (UNIDAD)	¿CUÁNDO?	¿QUIÉN?	REGISTRO	MEDIDA DE CORRECCIÓN
Cloro residual libre	Perforación	> 0,5 ppm y < 2,5 ppm	Semanal	Encargado de abastecimiento	Planilla monitoreo - AGR	Ajuste de dosis
Inspección visual	Alrededores perforación	Roturas, mal estado	Semanal	Encargado de abastecimiento	Planilla monitoreo - AGR	Aviso a superiores para evaluar reparaciones por medio de una compra si es necesario
Análisis completos	Agua elevada	Parámetros fuera de norma	Mensual	Laboratorio Regional	Software VS - Laboratorio	Aviso por correo a Encargados y jefatura técnica de resultados

PLAN DE SEGURIDAD DE AGUA

SISTEMA DE ABASTECIMIENTO
La Horqueta
(Escuela N° 79)



Sección COLONIA

2025

2ND LIGHTNING TALK: PENDING NEEDS

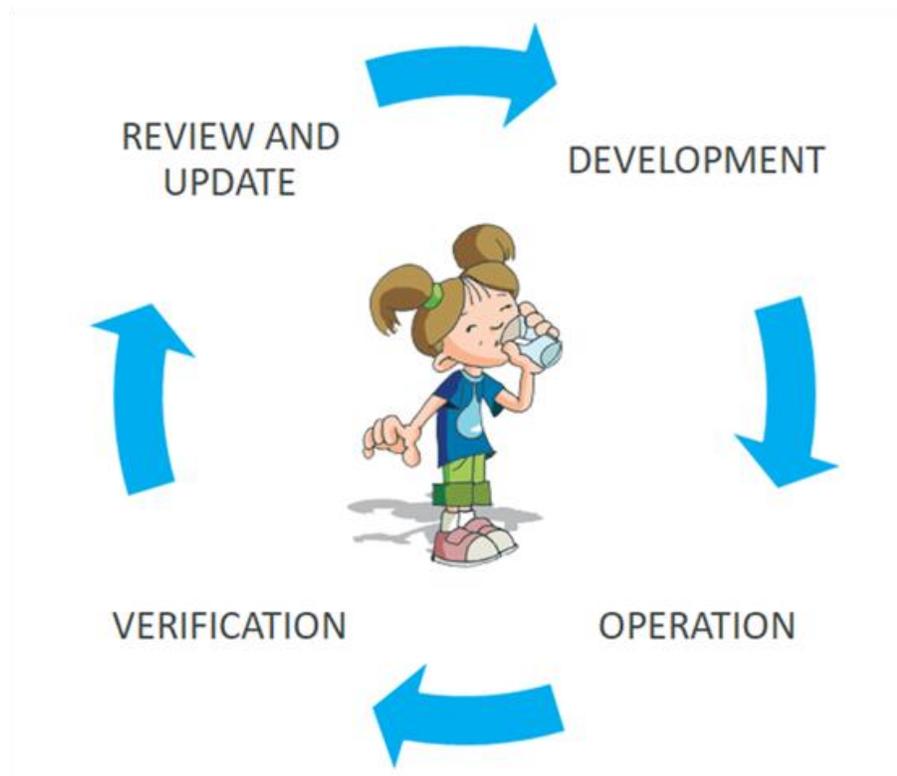


the international water association

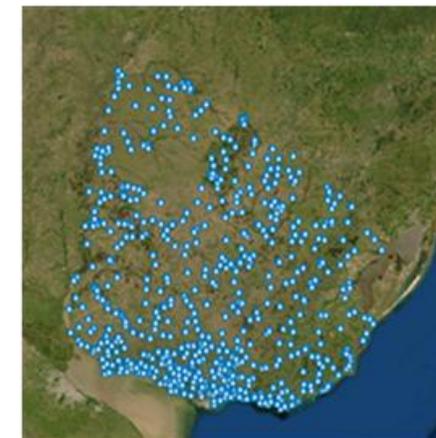
TREATMENT OPTIMIZATION



WATER SAFETY PLANNING IN ACTION



GOAL: UNIVERSALIZATION OF WSP IN URUGUAY 2030



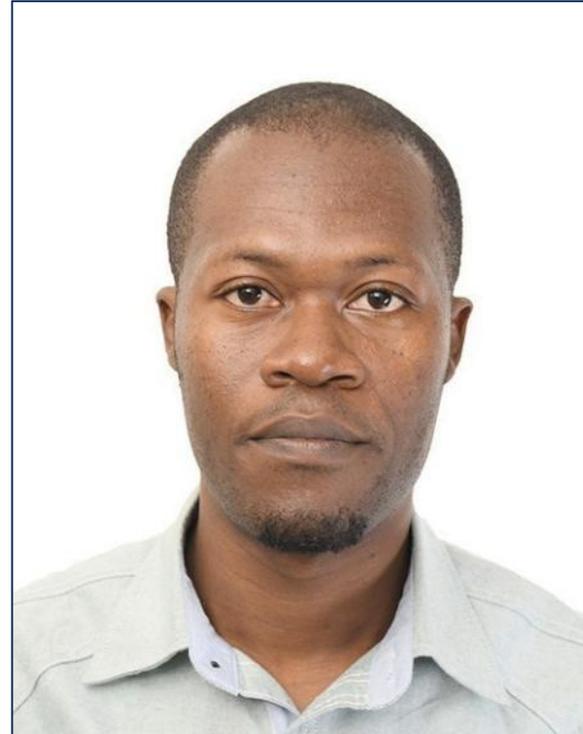
SUSTAINABLE DEVELOPMENT GOALS 2015–2030

Goal 6: Ensure the availability and sustainable management of water and sanitation for all.

Target 6.1: By 2030, achieve universal and equitable access to safe and affordable drinking-water for all.

Priority indicator: Percentage of population using safely managed drinking-water services.

3RD LIGHTNING TALK: JOSEPH OWUSU-ANSAH & FELIX AMPOFO-OFORI



Head of Technical Services and Optimizations, Safe Water Network, Ghana

Technical Services Manager, Safe Water Network, Ghana



- Safe Water Network is a not-for-profit organization dedicated to providing potable water for deprived communities on a sustainable basis
 - Employs a market-based approach
 - Operate in small towns and peri-urban communities with populations between 2,000 and 15,000
 - Currently running 115 Stations in 11 of the 16 regions in Ghana, adding an average of 5 stations each year
- Began implementation of WSPs in 46 stations in 2023, with technical assistance from The Aquaya Institute and Kwame Nkrumah University of Science and Technology and financial assistance from The Hilton Foundation

- Technical competence and commitment of the team (finding competent and committed people to build the team)
 - People employed to run stations have rather low levels of education (difficult to find higher levels in small towns)
 - Non-staff members co-opted to join the team are not committed since they do not report to SWN
- Finances to resolve issues
 - Some issues identified required substantial amounts of money to resolve (CapEx in nature)
- Community appreciation of water quality
 - Communities' perception of quality water (is the product not dirty?)
 - Also, many community members prioritize availability over quality
- Challenges in team formation
 - The team had external people whose knowledge and commitment to the industry were limited
 - Many community and district assembly people, co-opted to join the team, left the community after some months

3RD LIGHTNING TALK: UNIQUE STRATEGIES

- Two teams were formed
 - A “Core Team” consisting of only SWN staff
 - Extended team consisting of the Core Team + co-opted Community and District Assembly members
- Technical Support from Head Office
 - WSP training was simplified to the level of the local station staff
 - Each WSP team had staff from the Head Office as members
- Supervision using staff from headquarters
 - Monthly sanitary inspections are conducted by the Core Team
 - Quarterly meetings are organized for the extended team with Head Office staff participating
 - This increased cost
 - Head Office staff ensured that these meetings are held and reports are duly submitted
- Sourced funding to close gaps from donors (Hilton)
- Incentives by way of lunch and transportation for non-SWN staff

- A 3-day extensive classroom training was organized for key staff, notably, the officers and HQ technical staff
 - Before beginning the WSP exercise in any “station,” a full-day classroom training was organized for the WSP team within the community
 - This is a simplified version designed for the educational level of the participants
 - The team then conducted the WSP exercise the following day for the station
- Each time an HQ team is in a station for a quarterly meeting, some form of revision is done
- The Internal Audit Team also got involved—They audited stations against the documents prepared

- Increase technical oversight from head office
 - Further training for officers and station staff to enable them take up some of the work HQ staff are doing
 - Include WSP as a key performance indicator for station staff and appraise them accordingly
 - Get cluster officers to be co-facilitators in the initial training programs to improve ownership
- Feedback to the construction team when unsustainable issues are identified (valve chambers should be cast in concrete and not blocks)
- Sanitary inspections need to be a regular feature in station operations
- Many of the stations should be able to fund about 70% of the issues identified

4TH LIGHTNING TALK: SK WERAGODA



**Specialist (Water Treatment),
National Water Supply and Drainage
Board, Sri Lanka**



4TH LIGHTNING TALK: BACKGROUND



Drinking Water Supply Coverage: Total Population is 22 Million

Piped Water Supply:

Urban — 52% of the total population by the National Water Supply and Drainage Board

Semi-Urban — 2% of the total population by the Local Authorities

Rural — 12% of the total population by the Community Based Organizations (CBOs) registered under the Department of National Community Water Supply (DNCWS)

Individual Water Supply:

Domestic wells — 32% of the total population

Others — Rainwater harvesting, Bottle water, etc.

4TH LIGHTNING TALK: BARRIERS OVERCOME

- **Climate sensitive** catchments
- Main **land-use**: agriculture, cattle farming, tea estates, forests, etc.
- **No historical data** on water quality and quantity
- **Catchment demarcation** and encroachment
- **Inadequate water treatment**
- **Lack of understanding** and technology
- **Inconsistent management**
- Lack of Standard Operational Procedures (**SOPs**)
- **Improper designs** and no verifications
- **High Non-Revenue Water**
- **Poorly managed** distribution system
- **Myths** and taboos among consumers
- **Insufficient tariff** system

4TH LIGHTNING TALK: UNIQUE STRATEGIES



- Establishment of national institute for facilitation — **DNCWS**
- **Register all the CBOs** under the DNCWS — 4,300+ CBOs
- Draft the **act of DNCWS** while including **WSP as a mandatory** requirement
- Establish Water Safety **National Policy** under ADB guidance
- **National Monitoring System** — *Ongoing*
- **IWA Water Safety Conference in March 23–25, 2026** to share local and international knowledge

4TH LIGHTNING TALK: PRACTICAL APPROACHES



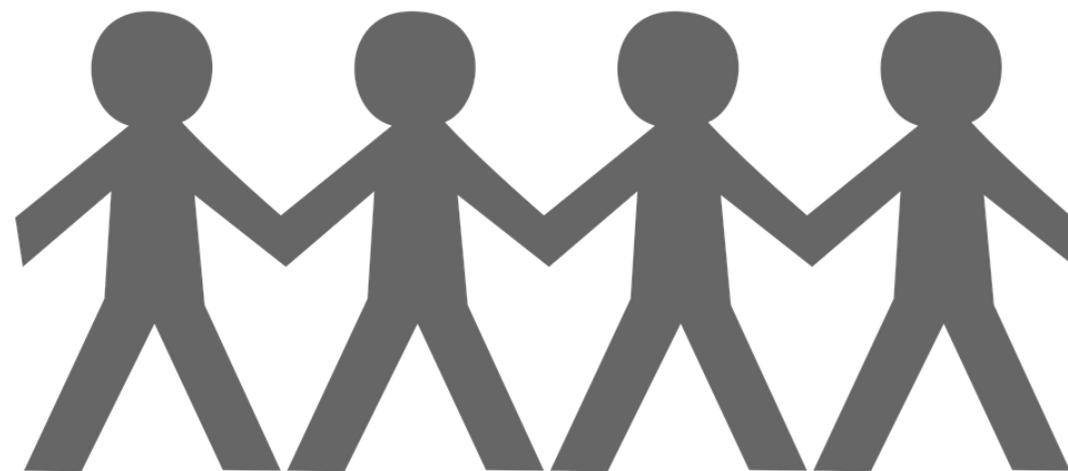
- Train **WSP Champions** across the country and arrange continuous training under the assistance of WHO, UNICEF, WaSSIP, GFC, etc.
- **Introduce appropriate treatment technologies** such as RSF/SSF, NF/RO combined systems, EDR technology, etc.
- **Establish WSP audit system** with the DNCWS
- **Develop WSP Implementation and Audit Manuals** in local languages — *Filling exercises*
- Training on **water quality monitoring** and analyzing data

4TH LIGHTNING TALK: PENDING NEEDS

- Revising the **National Plan of Drinking Water Supply** - *To ensure sustainability*
- **More funding** for introducing adequate treatment to all WSSs
- **Empowering** implementation of National Water Safety Policy
- Establishing a **national institute** to monitor and audit application of WSPs
- Conducting a **national level awareness** on importance of safe water access
- Establishing a **drinking water REGULATOR**

**(REPEAT) POLL #2:
WHAT DO YOU THINK ARE
THE PRIMARY BARRIERS
TO WSP IMPLEMENTATION
IN SMALL AND UNDER-RESOURCED SYSTEMS?**

PANEL DISCUSSION



SHARE-OUT EXERCISE:
IN YOUR OPINION, WHAT STRATEGIES
COULD HELP OVERCOME THE
BARRIERS TO WSP IMPLEMENTATION
IN SMALL AND UNDER-RESOURCED SYSTEMS?

AUDIENCE Q&A



THANK YOU FOR JOINING!



Further resources:

- WSP Specialist Group (join us on IWA Member Connect)
- WSPortal.org (free library!)
 - **Guidelines** for drinking-water quality: small water supplies
 - **Manual**: Water safety planning for small community water supplies
 - **Field guide** to improving small drinking-water supplies: water safety planning for rural communities
- Special Issue on Drinking Water Safety Plans in the Journal of Water and Health

Upcoming Water Safety Conference & Exhibition:

- March 23-25, 2026 in Ratmalana, Sri Lanka

IWA - Water Safety Conference 2026



Venue: 45 min from the Airport



10 Themes on WSP



Field Visit: UNESCO Heritage City



80 Oral and 40 Poster Presentations from over 20 Countries,
Exhibition, & Total Expected Participation over 1,000



UPCOMING IWA WEBINARS & EVENTS



25 February 2026
07:00 GMT

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