

OPERATION AND MAINTENANCE OF WASH INFRASTRUCTURE WEBINAR SERIES

Tuesday, April 20, 2021

9:00 - 10:00 AM ET



USAID
FROM THE AMERICAN PEOPLE



PRO-WASH
Practices, Research and Operations
in Water, Sanitation and Hygiene



World Vision

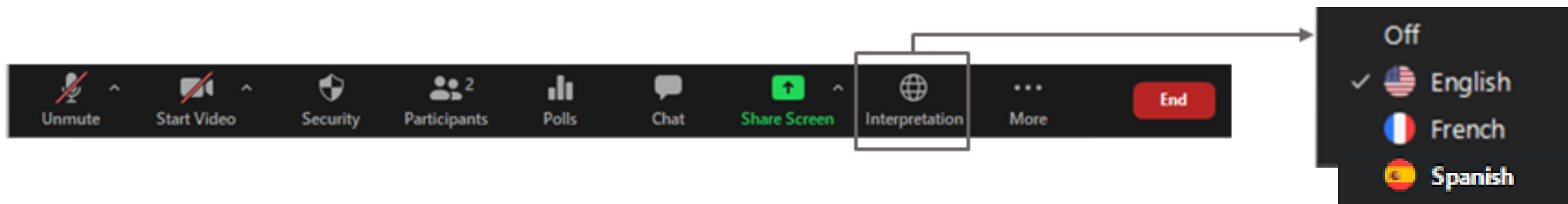
BEFORE WE BEGIN...

Everyone must select a language!

Click “interpretation” at the bottom of your Zoom window and select English or French.

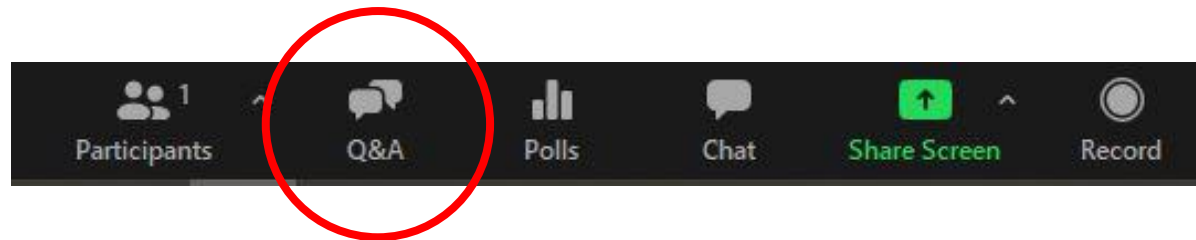
Chacun doit choisir une langue !

Cliquez sur « interprétation » au bas de votre écran Zoom et sélectionnez anglais ou français.



BEFORE WE BEGIN...

- Introduce yourself in the chat box with your name and where you're calling from
- Post your questions in the **Q&A box** at the bottom of your screen (do not include your questions in the chat box)



PRESENTERS



Jude Cobbing

Senior Specialist,
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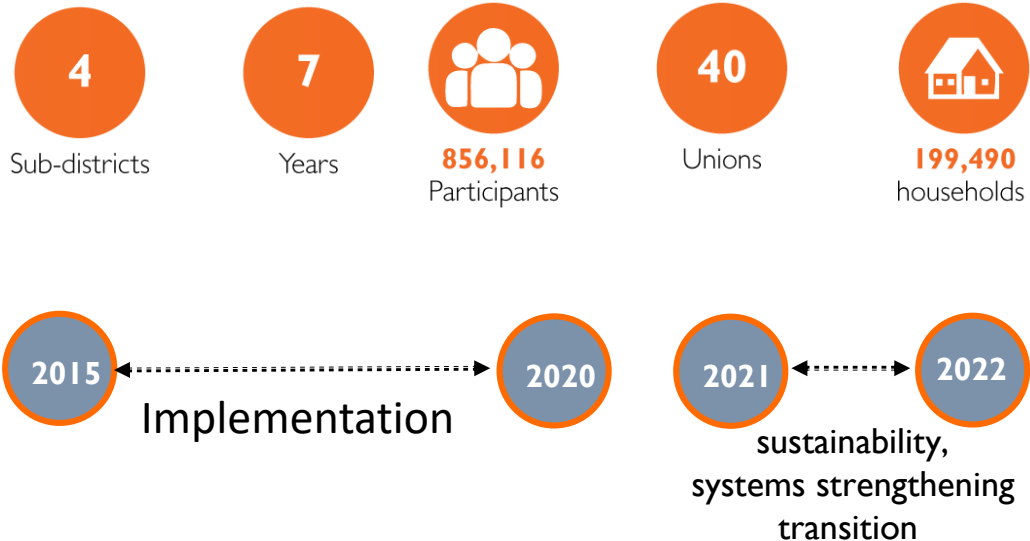


Operation and maintenance of reverse osmosis water plants in Bangladesh

Nobo Jatra – New Beginning
USAID's Resilience Food Security Activity

OVERVIEW

'Nobo Jatra-New Beginning'
USAID's Resilience Food Security Activity
implemented by World Vision.



SOUTHWEST BANGLADESH CONTEXT



**Groundwater
salinity**



Disasters



**Limited
water options
feasible**



**Weak
governance
including O&M**

Indicator	GoB National data (BDHS 2014)	NJP Baseline 2015
% of households using an improved drinking water source	98%	52%

NJP'S WASH STRATEGY



- Establish sustainable, locally owned models for **safe water** using market driven business models where possible.
- Leverage **Surface and Groundwater Study** and past experiences to determine gaps, identify and adapt to install water options that are sustainable.
- **Address systemic weaknesses** in governance of water points resulting in prolonged repair delays and non functionality of water options.

WHY REVERSE OSMOSIS (RO)?

NJP WASH strategy: Installation and/or repair of water facilities including tube wells, pond sand filters, arsenic iron removal plants, rain water harvesting systems.

Surface and Groundwater Study identified RO's as a useful technology to purify saline water. However, in southwest Bangladesh previously installed RO's were **largely not functional** – despite the technology being a good fit for the saline prone environment.

High investment (approx. \$26,000 per RO) was a deterrent and water options like **tube wells, pond sand filters** (approx. \$1,400) considered cost effective.

NJP identified the opportunity to apply **past lessons learned, understand gaps/challenges and adapt.**

RO PILOT USING A CLA APPROACH

Collaboration with USAID, GoB and communities

Phase 1

- Qualitative learning
- Literature review
- FGDs, KIIs with GoB, communities, NGOs
- Mapping of RO's in NJP locations

Phase 2

- Triangulate findings
- Pause and reflection with NJP team
- Design RO operation and business model informed by lessons learned

Phase 3

- Implement pilot gradually
- Regular monitoring involving GoB, communities
- Refine implementation based on evolving pilot

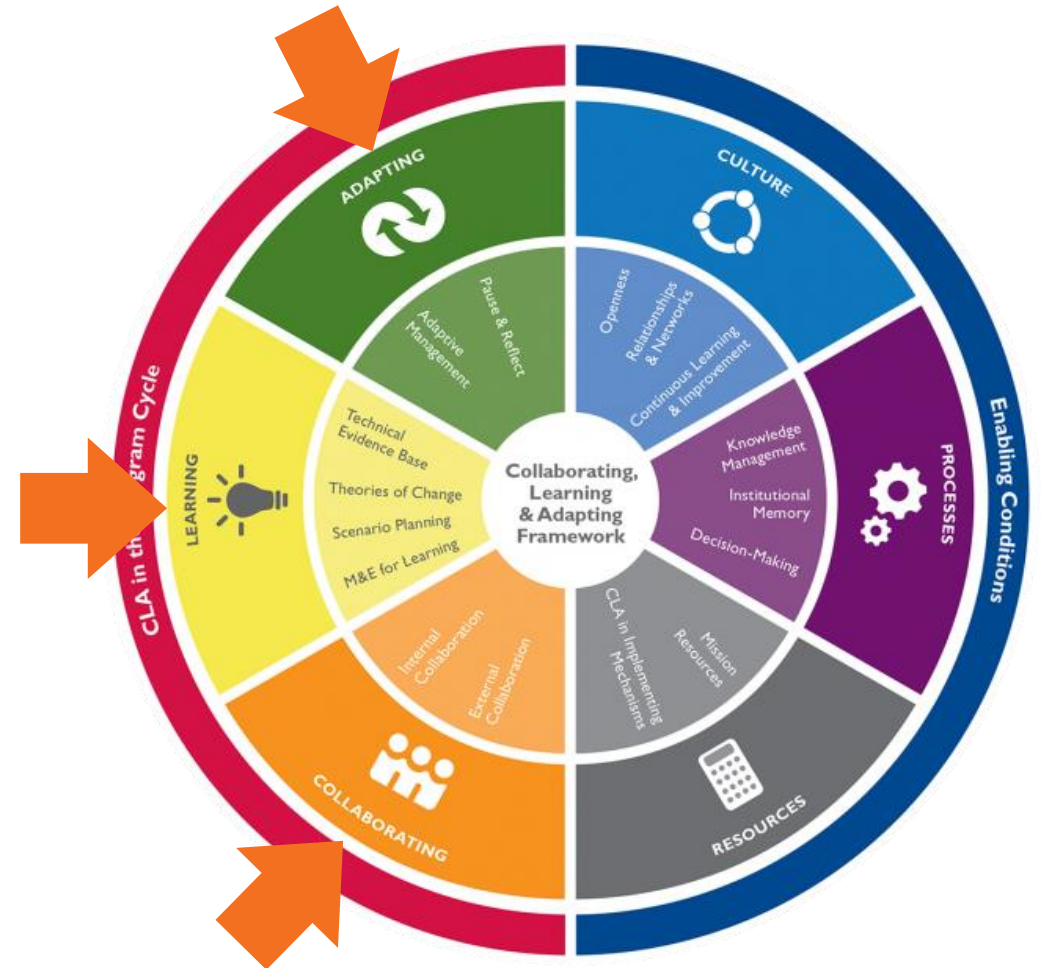
Phase 4

- Monitoring and facilitation support
- Coaching and mentoring

CLATO INFORM PILOT

Past challenges for RO's that emerged from external collaboration, review technical evidence base and 'pause and reflect':

- Weak O&M
- Lack of financial sustainability
- Governance gaps
- Weak coordination with Department of Public Health Engineering
- Reluctance to pay for water



APPLYING LESSONS LEARNED: NJP RO ADAPTATIONS

- **Coordination:** Engage Government, local elected persons and communities in design, planning implementation, monitoring.
- **Sustainability:** Operation and business model incl. financial sustainability via fee-based water and job creation for caretakers and water vendors.
- **Governance:** Water Management Committees (WMCs) & Caretakers: roles and responsibilities, capacity building on O&M, WQT, record keeping.



APPLYING LESSONS LEARNED: NJP RO ADAPTATIONS

- **Accountability:** Books of accounts, sales register, monthly progress updates to DPHE, local GoB, toll free hotline and caretaker phone number displayed on each RO, feedback boxes.
- **SBC:** To increase ownership of clean water, shift mindsets paying for water and drive up access to RO water.
- **Maintenance:** 3 year guarantees from machine/technology suppliers for VQT, repair and maintenance.



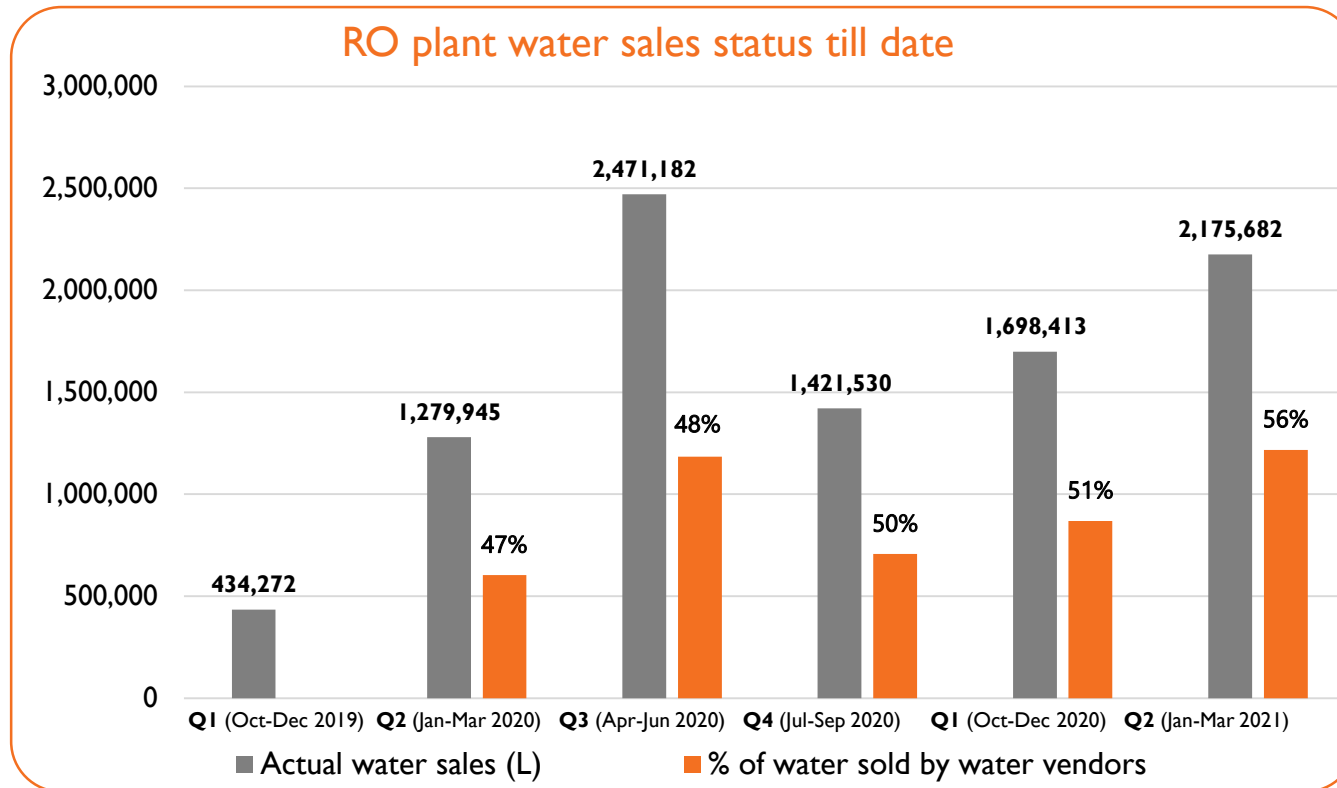
A MARKET SYSTEMS LENS

A sustainable, locally led business and operation model:

- **Introduce a fee based system for water:** WMCs set prices based on production costs, market prices with a minimal margin, 1 liter of water costs \$0.004 cents.
- Innovation through prepaid ATM cards: Minimize risks of handling cash.
- Bank accounts for each RO to deposit water sales.
- Expand market outreach via water vendors who deliver water to doorsteps.
- Market outreach campaigns to increase demand
- Contracts with supplier/vendor includes 3 year guarantees for WQT, machinery and parts.

RO WATER SALES

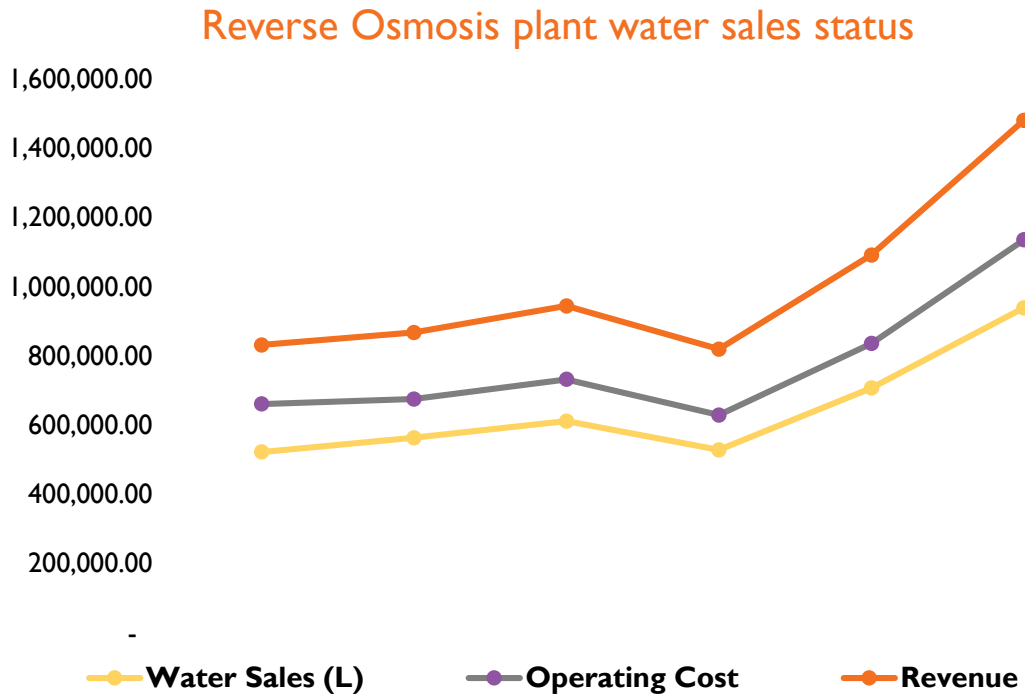
RO actual water sales and % of water sold via vendors.



- As per the business and operation plan for each RO, water sales cover RO operating costs (electricity bills, caretaker salaries, repair costs).

RO WATER SALES

Revenue from water sales covers operating costs for all 10 ROs.



- Steady increase in revenue due to market outreach campaigns to raise demand for RO water.

RESULTS

- **10 reverse osmosis** plants are providing year round access to safe drinking water – even **during COVID-19** and aftermath of cyclones.
- From 2019-till date, 9.4 ML liters of water sold @\$0.004/liter.
- **Total income** through water selling till date \$41,188.
- All ROs are able to meet **operation costs from water sales**.
- **40 water vendors** delivered 4.5 million liters to doorsteps of families, GoB offices and businesses.
- 18,000 people reached in each month in average with safe drinking water via 10 RO plants.

LESSONS LEARNED

- **Factor in financial sustainability, O&M:** Embed into design of pilot and business and operational model.
- **Adapt based on evolving content:** ATM innovation worked well but communities preferred paying in cash. 50% RO's are using ATMs, 50% paying cash.
- **Enhance ownership of communities and GoB:** through regular progress updates during planning, designing, piloting and regular implementation at Union, sub district and divisional level, joint visits.
- **Establish monitoring mechanisms** jointly with communities and Department of Public Health Engineering.
- **Establish mechanisms for WQTs** through vendors/suppliers and WMCs.

RO SPOTLIGHT

USAID Bangladesh @USAIDBangladesh · July 17 · 🌐

Safe water for drinking, cooking, and cleaning hands - it's what every community needs. Read how USAID's Nobo Jatra with World Vision Bangladesh uses a great technology -- reverse osmosis -- and an "ATM card" to pay for water, thus helping the water management committee maintain the system. This pilot program is proving that the system works - and that communities can take a business approach and ownership to water.



Dhaka Tribune BREAKING NEWS | BREAKING BARRIERS

DHAKATRIBUNE.COM

OP-ED: Water solutions in the time of Covid-19 [Learn More](#)

👍👍👍 You, Mou Lee and 2.8K others 17 Comments 16 Shares

Love Comment Share

World Vision Bangladesh @wvbangladesh · Mar 22

High-level salinity in 💧 = Safe drinking 💧 scarcity

The impact of the ten reverse osmosis plants built by @USAID and @WorldVision in southwest Bangladesh to tackle this challenge is 🙌👍.

#USAIDSavesLives #Valuingwater #worldwaterday2021 #NoboJatra



Valuing safe drinking water in southwest Bangladesh
Let's connect: Website:
<https://www.wvi.org/bangladesh> Facebook: ...
[youtube.com](#)

💬 5 ❤️ 6 📤

World Vision USA @WorldVisionUSA · Mar 23

In our Nobo Jatra project in Bangladesh, more than 148,000 people can now access clean drinking water thanks to reverse osmosis plants. Having clean 💧 helps children stay healthy and in school. bit.ly/3tD4grv
#WorldWaterDay @USAIDSavesLives



💬 12 ❤️ 27 📤

World Vision Bangladesh @wvbangladesh · Mar 21

The ten reverse osmosis plants built by @USAID and @WorldVision provide the most vulnerable people with safe drinking water in southwest Bangladesh. The scarcity of safe drinking water is severe here due to high salinity levels. #WWD2021 #ValuingWater #USAIDSavesLives #noboJatra



The scarcity of safe drinking water is always significant in Kaliganj, Shyamnagar, Kayra, and Dacope sub-districts due to high salinity levels.

However, Sadia, 6, and Farzana, 5, now drink safe water year-round and are healthier than ever before.

The ten reverse osmosis plants built by USAID and World Vision are a big hit here! The plants provide families and businesses with safe drinking water, lessening the suffering of the most vulnerable children and the community.

💬 5 ❤️ 10 📤

USAID's Bureau for Humanitarian Assistance @USAIDSavesLives

IN THE NEWS: Ever heard of a water ATM? @USAID & @wvbangladesh are helping communities in SW #Bangladesh access safe 💧 using ATM 🇧🇩's at #innovative water treatment machines managed by locals so families can 🍽️, cook & wash 🙌. Read more in @DhakaTribune:

OP-ED: Water solutions in the time of Covid-19
The goal is to give communities ownership of health and nutrition
dhakatribune.com

2:05 AM · Aug 1, 2020 · Hootsuite Inc.

25 Retweets 1 Quote Tweet 45 Likes

Q&A Session

Thank you!

Join us for our next webinar:

Thursday, April 29, 2021
8:30 - 9:30 AM ET

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