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Asia Water Forum 2022

8–11 August 2022 • Online

Focus Area: Universal water supply and sanitation services

Building a viable governance model for peri-urban water supply in Papua New Guinea

Schedule: 9 August 2022 | 11:00 a.m. - 12:30 p.m. (GMT+08)

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Background and challenges

Urban/peri-urban settlement characters:

Unplanned, no legal land tenure, large household size, makeshift housing, poor/non-existent services, economically dependent on urban area, law & order challenges, and ethnically diverse.

PNG peri-urban challenges:

- PNG's population is rapidly growing, currently estimated at 8.8 million and increasing to 13.9 million by 2050
- The population of urban and peri-urban dwellers will double to 24% of the population by 2050, placing significant strain on water and sanitation services.
- There are an estimated 114 settlements in Port Moresby alone, with over 400,000 people living in settlements and traditional urban villages.





Peri-urban & WASH services

What does it mean for provision and governance of WASH services?

- State owned utility Water PNG serves urban areas in 21 towns across the country.
- Water PNG classifies settlements as NRW with “limited service” provided.
- Access to piped water has declined since 2000, and the proportion of non-piped water has tripled from 10% in 2000 to 34% in 2017.

Typical water supply situation in settlements

- Self supply and illegal connection
- “Limited” piped supply
- Substandard service

PNG Urban population with improved water supply 2000 and 2020

Proportion of urban population using improved water supplies	2000	2020
Safely managed	-	-
Available on premises	35%	86%
Available when needed	47%	46%
Free from contamination	-	-
Piped	76%	53%
Non-piped	12%	34%

Source: JMP, 2021





Non-Revenue Water

What does it mean for provision and governance of WASH services?

- Failure to pay for water is one of the biggest challenges to the sustainability of Water PNG.
- Utility estimated NRW at 60-70% of total water produced.
- Utility is also losing revenue to alternative suppliers such as informal vendors and on-sellers. In Port Moresby alone K5 million (\$A1.8m) in revenue is lost annually.

Lack of willingness to pay is a myth!

- Someone is always paid for water.
- Households are paying 50-100 times the official piped water tariff (K1.50 (US\$0.53) per/KL).
- A household purchasing one 20L jerry can per day is spending K60(US\$17)/month on water (up to 30% of monthly income for low income households).
- Our study shows high willingness to pay for reliable, good quality water, convenient payment method and accessible to all.



Informal carted water vendor “water boy” selling water for K1.50-K2 (US\$0.43-0.57) per Jerry can. August 2020, Pari Village, NCD



Building a viable governance model for Peri-urban water supply: Pari Village, Port Moresby

PD1

PD2

“delegated management” model

PDO

- 3-year MOA between Water PNG and Motu Koitabu Assembly (MKA) to supply bulk water
- Establishment of a professionalized Pari Water Authority (PWA)
- MKA is asset owner, responsible for coordination of financial recovery from the authority and payment to Water PNG
- PWA on-selling water through kiosks and piped connections
- PWA is responsible for entire system after bulk meter

Function (as per MOA)	Responsibility				
	Water PNG	MKA	Pari Water Authority	Regulator	Customer
Asset ownership (after bulk billing meter)			✓		
Supply of bulk treated water (1,350 L/p/month)	✓				
Operation and maintenance (source and distribution mains)	✓				
Operation and maintenance (internal reticulation)			✓		
Asset renewal, system extension, new connections			✓		
Tariff setting (bulk water supply)				✓	
Tariff setting (retail supply)		✓	✓		
Payment of bulk water tariff			✓		
Meter reading and billing			✓		
Payment for water					✓
Customer/community relations			✓		
Kiosk operator management			✓		
Reporting illegal connections, vandalism		✓	✓		✓
Supervision, oversight		✓			



Slide 5

PD0 To what extent will you be describing the role of MKA and capacity to make legislation. Could simplify by saying "under local government legislation".

Model needs to be relatable to many and not seen as a one-off only applicable to PNG.

Penny Dutton, 2022-08-04T23:23:51.282

PD1 I have reorganised this slightly to start with the MOA, and work downwards. These sort of institutional arrangements are important for the audience.

Penny Dutton, 2022-08-04T23:31:37.695

PD2 I know it is more accurate to say NCD but Port Moresby might be more relatable???

Penny Dutton, 2022-08-04T23:38:44.076

Building a viable governance model for Peri-urban water supply: Pari Village, Port Moresby

Issues with bulk water billing for Pari

- MKA has accumulated massive debts to water utility in the past
- MKA wants to pay utility in advance (prepaid) to minimize risk – bulk service only
- Utility offering an attractive wholesale rate of K1 (US\$0.28) per kL

Establishment of a professionally managed authority for quality service provision

PDO

- PWA to have paid, qualified staff including manager, part time accountant. Connection with the community is important
- Small office based in Pari (similar to kiosk)



Slide 6

PD0 Rate revised, however maybe we should disclose this rate publicly. Just need to say it is the same as settlement rates eg. For tap stands
Penny Dutton, 2022-08-04T23:34:49.963

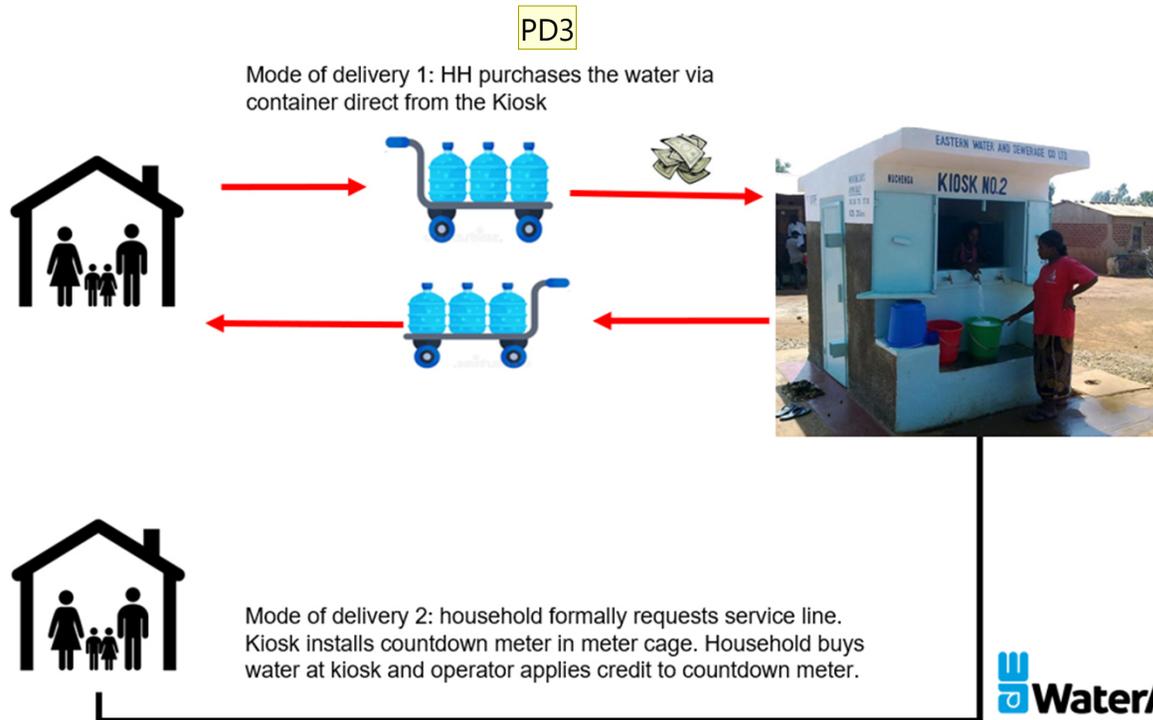
Building a viable governance model for Peri-urban water supply: Pari Village, Port Moresby

Pre-paid Kiosk

- Small building with tap operator who takes payment PD2
- Centrally located
- Piped water with PD0 storage capacity PD1
- Act as shops for selling other essential items
- Operators are agents of MKA not employees
- Performance contract for operators with operations manual
- Trained in finance, customer relations and have knowledge of the network

Hybrid delivery mode

- Direct purchase from the kiosk
- Service line with meter



Slide 7

PD0 Maybe update this to reflect the actual selection of kiosk locations and factors that affected the choice.

Penny Dutton, 2022-08-04T23:42:37.191

PD1 Say why the storage was important to put in place.

Penny Dutton, 2022-08-04T23:43:46.273

PD2 Is it still a pre-paid kiosk? Not really, pay as you go? Maybe just say kiosk.

Penny Dutton, 2022-08-04T23:44:06.722

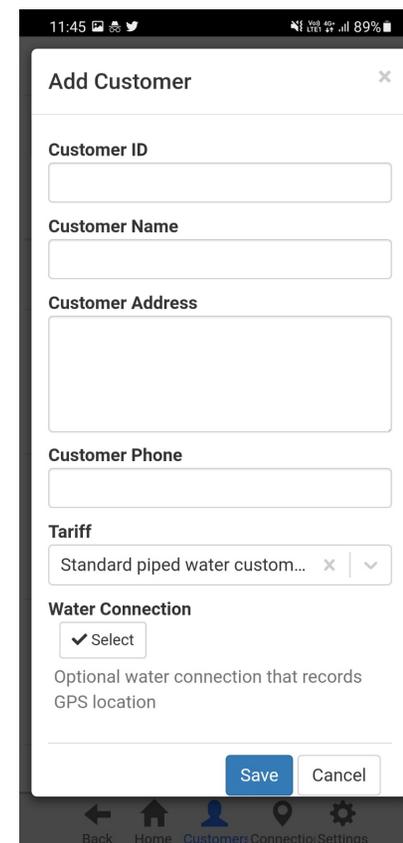
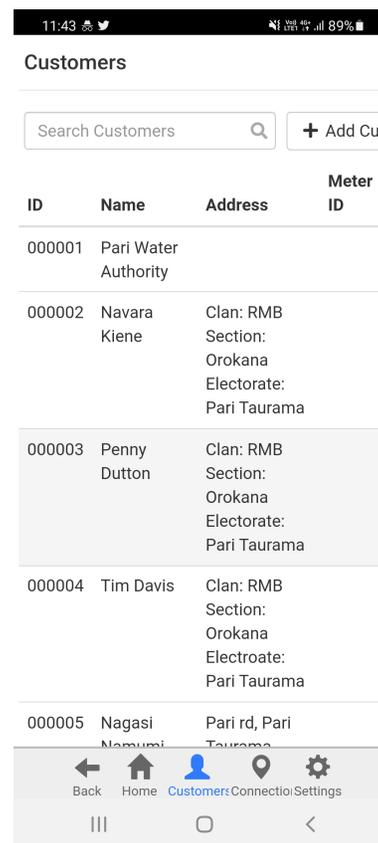
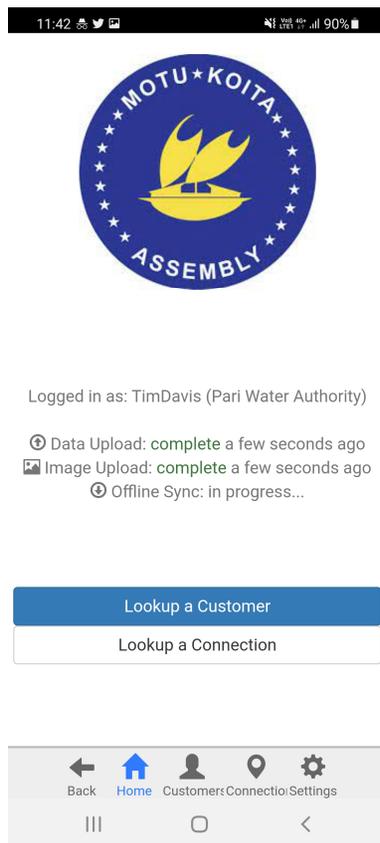
PD3 Delete "countdown" from Mode 2 in box

Penny Dutton, 2022-08-04T23:49:47.613

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Kiosk Accounting System & Meter Reading

PDO



Slide 8

PDO

I think this system will be of interest. Other models also use accounting systems but they are never really discussed so it is hard to know how effective they are. The fact that this was developed by mWater based on experience elsewhere is noteworthy. Also the asset management and maintenance aspects are different

Penny Dutton, 2022-08-04T23:52:32.296

Building a viable governance model for Peri-urban water supply: Pari Village, Port Moresby

Learning for WaterAid

PDO

- Scale of the governance model to other 8 Motu Koita villages (approx. 60,000 people) and other areas of the country
- Strong buy-in from Water PNG who see the model as high potential for tackling NRW
- High impact, especially for low-income households (pay a fraction of the cost for water)
- Enhance sustainability of the National Water utility
- Can the model be replicated

Thank you!
Tenkyu!



Slide 9

PDO Important to note the level of support needed from WaterAid.

This is true of all models eg. Eau et Vie but we need to remind donors that because this is new it takes time and a lot of handholding and collaboration, irrespective of all the usual delays in PNG (COVID, election etc).

Penny Dutton, 2022-08-04T23:54:52.434