

MYTHS and FACTS

About Water Sources in
Urban Areas in Indonesia



MYTHS & FACTS BOOKLET ABOUT:

Water sources in urban areas in
Indonesia

This booklet is prepared to be used by PDAM staff working in promotions and customer or community engagement, and also used by PERPAMSI as incorporated into their training materials. We expected that this booklet could be useful for NGOs involved with water, sanitation and hygiene (WASH) programs in urban areas, local Women's cadres (Ibu-Ibu PKK, posyandu, etc) including Local health agency and local leaders.

This booklet has been prepared by University of Technology Sydney's Institute for Sustainable Futures dan Universitas Indonesia research team.





PIPED CONNECTION

MYTH?

Connecting to piped water requires an expensive lump sum payment



FACT!



The fee to connect is **NOT** always expensive

In fact, arrangements can often be made to pay in installments. Subsidies are also offered for particular groups or for specific time-frames.





PIPED CONNECTION

MYTH?

Getting a piped connection requires disruptive activities that damage the house and property



FACT!

Non-disruptive installation methods are possible

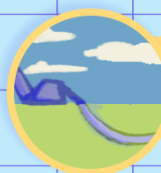
PDAM can provide advice on the most efficient and least disruptive installation strategy for each household and provide the connection without using destructive installation methods.

Some installation techniques that are already implemented by PDAM:



Water temporary storage

This can make the space that is required for installment doesn't take up much space.



Horizontal Directional Drilling (HDD) technique

HDD technique minimizes disruption to roads, sidewalks, and landscapes by eliminating the need for open trenches.

References:

KUPAS MERDEKA. (2018). PDAM Kabupaten Bogor Rencanakan Pemasangan Pipa dengan Metode HDD. Retrieved from [kupasmerdeka.com: https://www.kupasmerdeka.com/2018/10/pdam-kabupaten-bogor-rencanakan-pemasangan-pipa-dengan-metode-hdd/](https://www.kupasmerdeka.com/2018/10/pdam-kabupaten-bogor-rencanakan-pemasangan-pipa-dengan-metode-hdd/)



PIPED CONNECTION

MYTH?

Establishing a piped connection requires at least five residents to install _____

FACT!

Not necessarily!

- Individuals can also connect to piped water
- PDAMs can facilitate group connection processes



It depends on how much additional pipe is needed by the people that request connection. Longer pipe is more costly to customers.



An individual is certainly able to connect to piped water if they are willing to pay the additional cost.



PIPED CONNECTION

MYTH?

The paperwork required to connect to piped water is complicated



FACT!

The paperwork required to connect to piped water is relatively straightforward and shouldn't take you too long



What You Need :

- Photocopy of Resident Identity Card (KTP) and Family Card (KK)
- Photocopy of land and building tax or temporary service statement
- 4 pieces of Rp 10.000 stamps

Or you can contact your local PDAM and they will help you!





PIPED CONNECTION

MYTH?

Piped connection is not available for alleyways, small spaces and areas long distances from the main distribution pipe

FACT!



Piped connection is available for alleyways, small spaces

Not only that, PDAMs could provide technical solutions to water provision in such locations.



PIPED CONNECTION

MYTH?

Piped connection is not available in small houses



FACT!

PDAM can install piped connection in adaptable ways

PDAM adaptability of pipe installations include the use of suitably sized piping tailored to the constraints of smaller living spaces.



PIPED CONNECTION

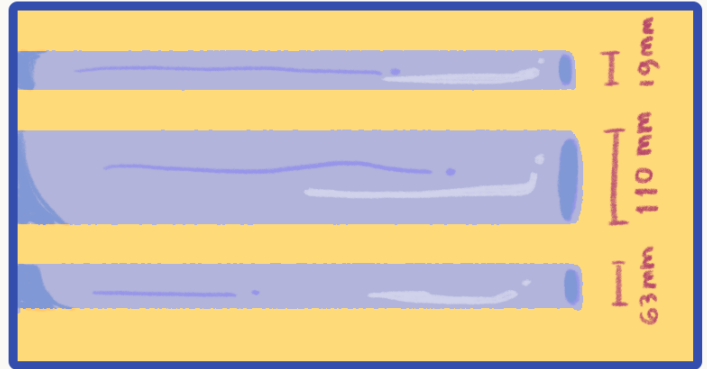


PDAM has developed technical solutions to support pipe installation in alleyways



75% OF TERTIARY PIPED CONNECTIONS HAVE BEEN SUCCESSFULLY CONNECTED IN SOUTH OF SANGGATA, INCLUDING IN THE ALLEYWAYS BY PDAM KUTIM.

The pipe installation project is being held on several residential areas, such as on AW Syahrani Street, Perintis alley, Julak alley, and Gatot Kaca alley.



THERE ARE CUSTOMIZED PIPE DIAMETERS THAT CAN BE ADAPTED TO THE NEEDS OF THE PIPE INSTALLATIONS.

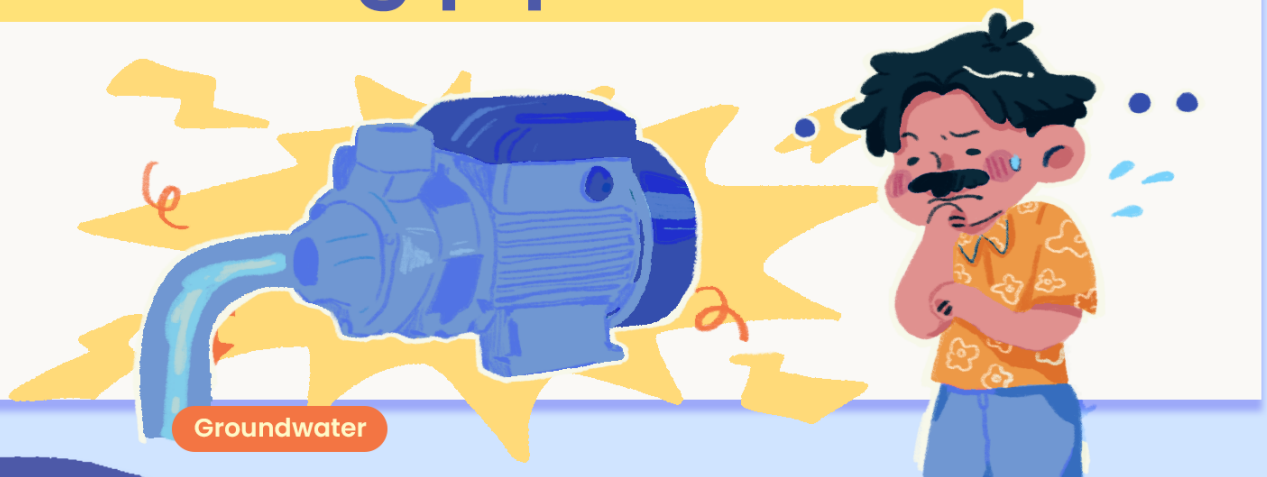
Pipe installation process in South of Sanggata involved the use of pipes with 63 mm and 110 mm for the diameters while having various lengths that are customized with the customer's needs.

References:

Data analysis results from researchers on the Water for Women Self Supply project (2019–2021) and RECHARGE project (2023–2024) Pemerintah Kabupaten Kutai Timur. (2019). Penyampungan Pipa Tersier PDAM Kutim Capai 75 Persen – Khusus Wilayah Sanggata Utara. Retrieved from pro.kutaitimurkab.go.id: <https://pro.kutaitimurkab.go.id/2019/07/26/penyampungan-pipa-tersier-pdam-kutim-capai-75-persen-khusus-wilayah-sanggata-utara/>



Using your own groundwater is cheaper than using piped water



FACT!

Overall, pumping groundwater costs more per litre of water than piped water

There are hidden costs associated with groundwater, such as the electricity bills from running pumps, costs from pump replacement and costs to deepen wells as groundwater levels decline from overuse. This makes it a more expensive option in the long run



PIPED WATER VS GROUNDWATER

MYTH?

The ongoing monthly cost of piped water is high - it's only accessible to wealthy people!



FACTS!



Piped water tariffs are reasonable, easy-to-pay, and in the long run are cheaper than paying for groundwater pumping



References:

Data analysis results from researchers on the Water for Women Self Supply project (2019-2021) and RECHARGE project (2023-2024)

COST COMPARISON

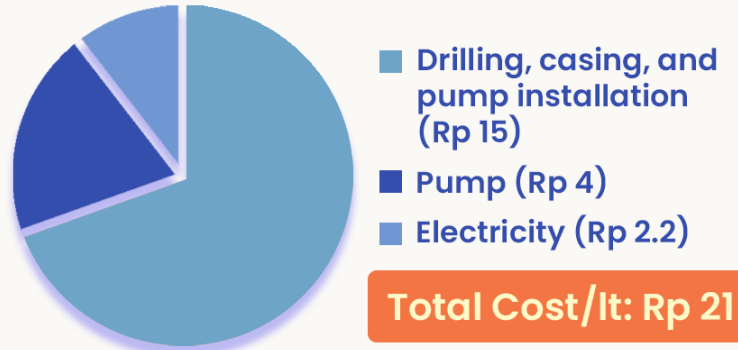


Assuming water usage for 1 household per month is 30 m³, the total cost/litre for each water source:

PDAM Water*



Groundwater** (Jakarta, Bogor, Bekasi)



*Piped-water

**Pump hand, electric pump

Piped Water Sold in Jerry Can by Water Man

Total Cost/lt: Rp 170

Gallon (Refill Water)

Total Cost/lt: Rp 368 - Rp 1,700

Bottled Water

Total Cost/lt: Rp 4,300

Groundwater (Metro)

Initial Cost (Rp 3)
Routine annual cost (Rp 1.4)

Total Cost/lt: Rp 5

MONTHLY COST PER LITRE

COST COMPARISON

PDAM Water

Total Cost/lt: Rp 661.5

New Installations ----- Rp 627.5

Water usage per month (30 m³) and admin fee ----- Rp 34

Groundwater (Jakarta, Bogor, Bekasi)

Total Cost/lt: Rp 4,566

Drilling, casing, and pump installation ----- Rp 3,000

Pump ----- Rp 1,500

Electricity (250 watt) ----- Rp 65.3

- One-time payment
- Monthly cost

PAYMENT METHODS FOR PDAM WATER



Online Payment/
E-Wallet



Bank Transfer



Convenience Store



Pay Later
System



The chlorine smell of piped water means that it is unsafe



FACTS!

Actually, the smell of chlorine provides reassurance of water safety!

Adding chlorine to the water is part of the treatment and disinfection process, which groundwater lacks.

The quantity of chlorine is very small and is not harmful to health. People generally get used to the smell and taste and stop noticing it.

References:

Data analysis results from researchers on the Water for Women Self Supply project (2019-2021) and RECHARGE project (2023-2024)
PALYJA. (2024). Kualitas Air PAM Jaya Sesuai Standar Peraturan Menteri Kesehatan Republik Indonesia. Retrieved from PALYJA: <https://www.palyja.co.id/id/list-berita-terbaru/kualitas-air-pam-jaya-sesuai-standar-peraturan-menteri-kesehatan-republik-indonesia/>



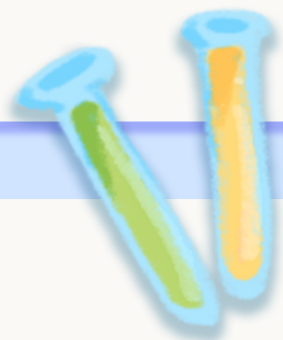
Groundwater is safer than piped water _____



FACTS!

Piped water by PDAM aims to meet the quality standards in the Ministry of Health Regulation No. 492 of 2010

Research shows high levels of groundwater contamination in urban areas. Meanwhile, piped water by PDAM undergoes many steps to be treated and purified, to meet water quality standards mentioned above.



FACTORS THAT CAUSE THE DECLINE IN QUALITY

Leaks in the network pipes or household installation pipes

The mixing of PDAM water with groundwater or other sources in the customer's storage tank

THE QUALITY OF GROUNDWATER

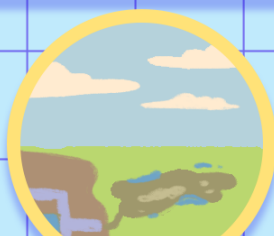
Groundwater Characteristics		Quality Standards****	
TDS (mg/L)	Total Coliform (MPN/100 mL)	TDS (mg/L)	Total Coliform (MPN/100 mL)
1.000* - 16.000**	0 - 200***	500	0

NOTES:

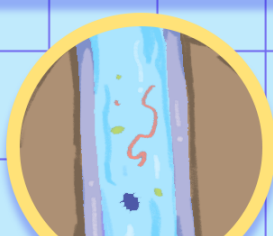
- * Groundwater in big cities, such as Bandung, Malang and Jakarta (Indonesia Water Portal, 2022)
- ** Groundwater in North Jakarta, Central Jakarta, and Tangerang City (Fadly, et al, 2017)
- *** Groundwater in Makasar Subdistrict, East Jakarta (Haniifah, 2023)
- **** The Ministry of Health Regulation No. 492 of 2010

The quality of groundwater in major cities in Indonesia still does not meet the required water quality standards

THE RISKS OF DECLINING GROUNDWATER QUALITY IN DENSELY POPULATED URBAN AREAS



Leakage or overflow from septic tank



Insufficient treatment of septic systems



Higher risk of contaminated groundwater



Waterborne diseases



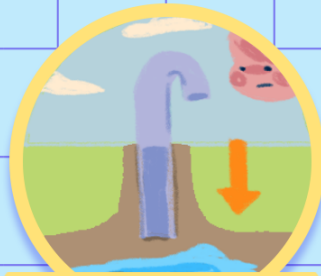
Challenges to monitor and regulate

It will takes YEARS or DECADES for contaminated groundwater to naturally purify itself

WHY PDAM WATER?



Piped water is treated and monitored for safety



Using piped water reduces land subsidence risk



Sustainable water resource management

PDAM WATER SYSTEM

- A well-managed piped water system that treats water centrally
- Water treatment for the water distributed by PDAM will significantly reduce risks and provide a safer, more reliable water source
- The system allows for better monitoring and quality control, ensuring that water meets safety standards

References:

- Fadly, M., Prayogi, T. E., Mohamad, F., Zulfaris, D. Y., Memed, M. W., Daryanto, A., ... Mallki, F. (2017). Groundwater Quality Assessment in Jakarta Capital Region for the Safe Drinking Water. IOP Conference Series: Materials Science and Engineering, 180. Bandung: IOP Science. doi:10.1088/1757-899X/180/1/012063
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- Putri, P. W. (2019). The Forgotten Water - The Role of Decentralised Wastewater Management in Jakarta's Socio-Ecological System. Retrieved from Urbanet: <https://www.urbanet.info/wastewater-management-in-jakarta/>



It doesn't affect anyone else if our household continues to use our own well or borehole, rather than connecting to piped water

FACTS!

If only some households connect to piped water supply, then it is difficult for PDAMs to provide efficient services at a reasonable cost

Opting for piped water means choosing reliability, affordability, and environmental sustainability.

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