

Policy context for managing risks of self-supplied water in Indonesia

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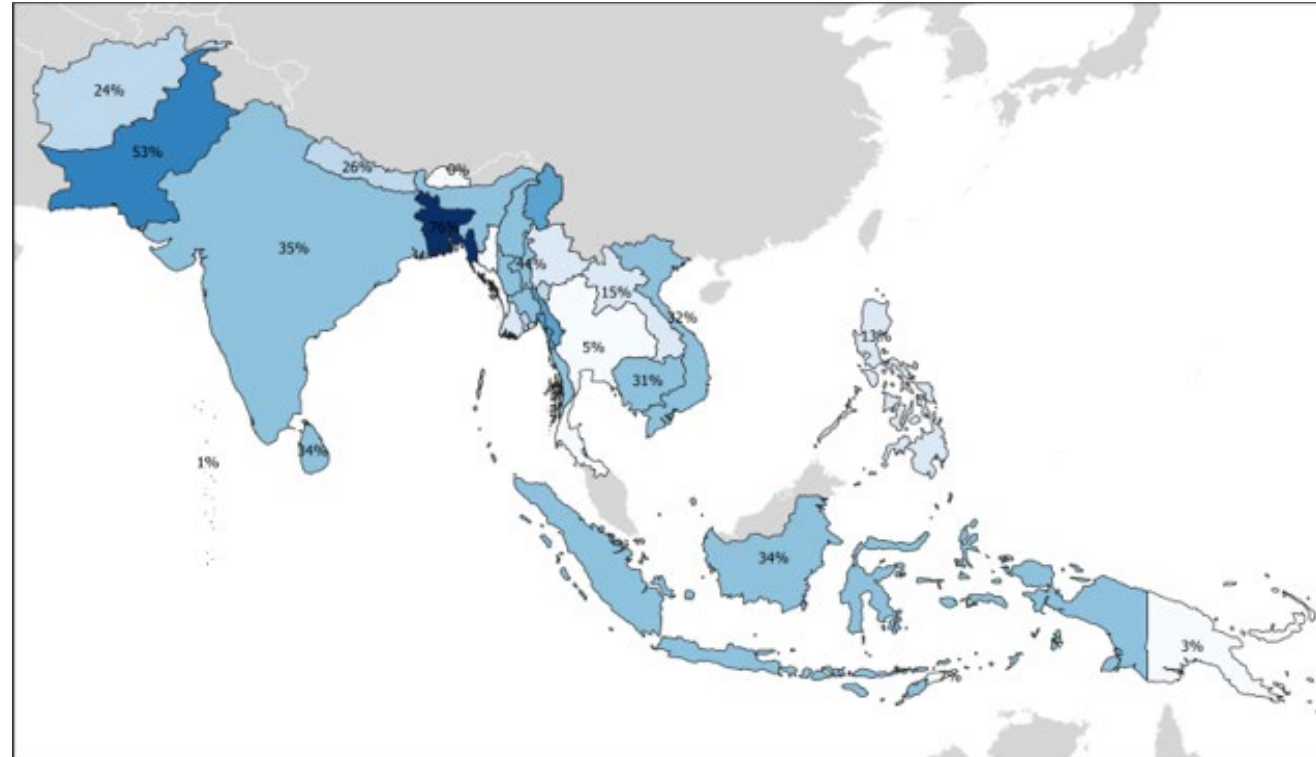
Achieving SDG6 in a Changing Climate



#WaWF23

Self-supply: from coping mechanism to a go-to option

- Owned, invested, managed by household
- On-premises
- Groundwater self-supply is used by >570 million people in rural Asia-Pacific



In Indonesia, groundwater self-supply services is dominant

Water Source	Population accessing source as primary drinking water (%)
Bottled water	10,2
Refill water	29,1
Piped water	9,9
Borehole	19,1
Protected well	14,4
Protected spring	7,8
Rainwater	2,2
Unprotected well	1,9
Other unimproved sources	5,4

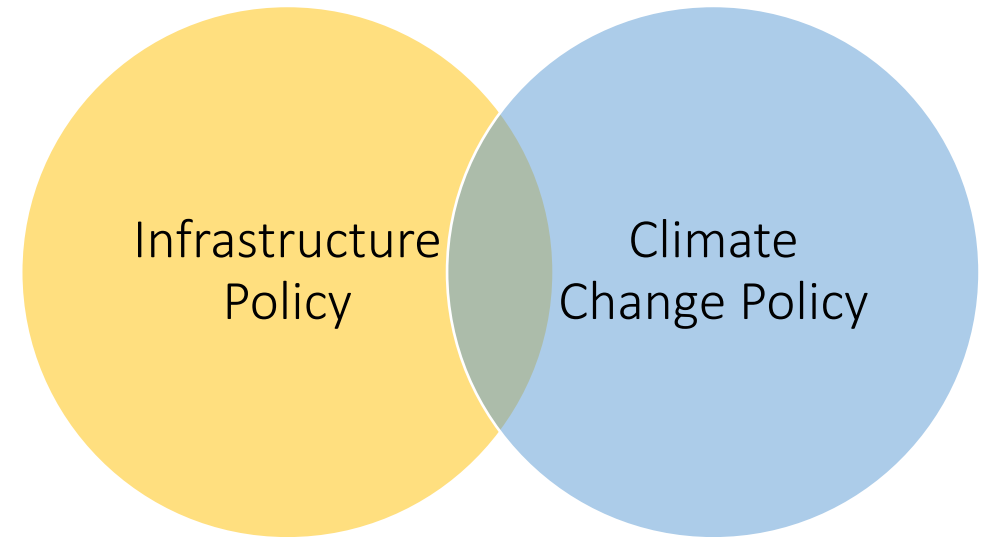


Issue:

- Underregulated & scarcely monitored
- Climate change

Aim of study:

Examine governance arrangements to identify risks due to changing climate and the inexistence or implementation gaps of laws and regulations.





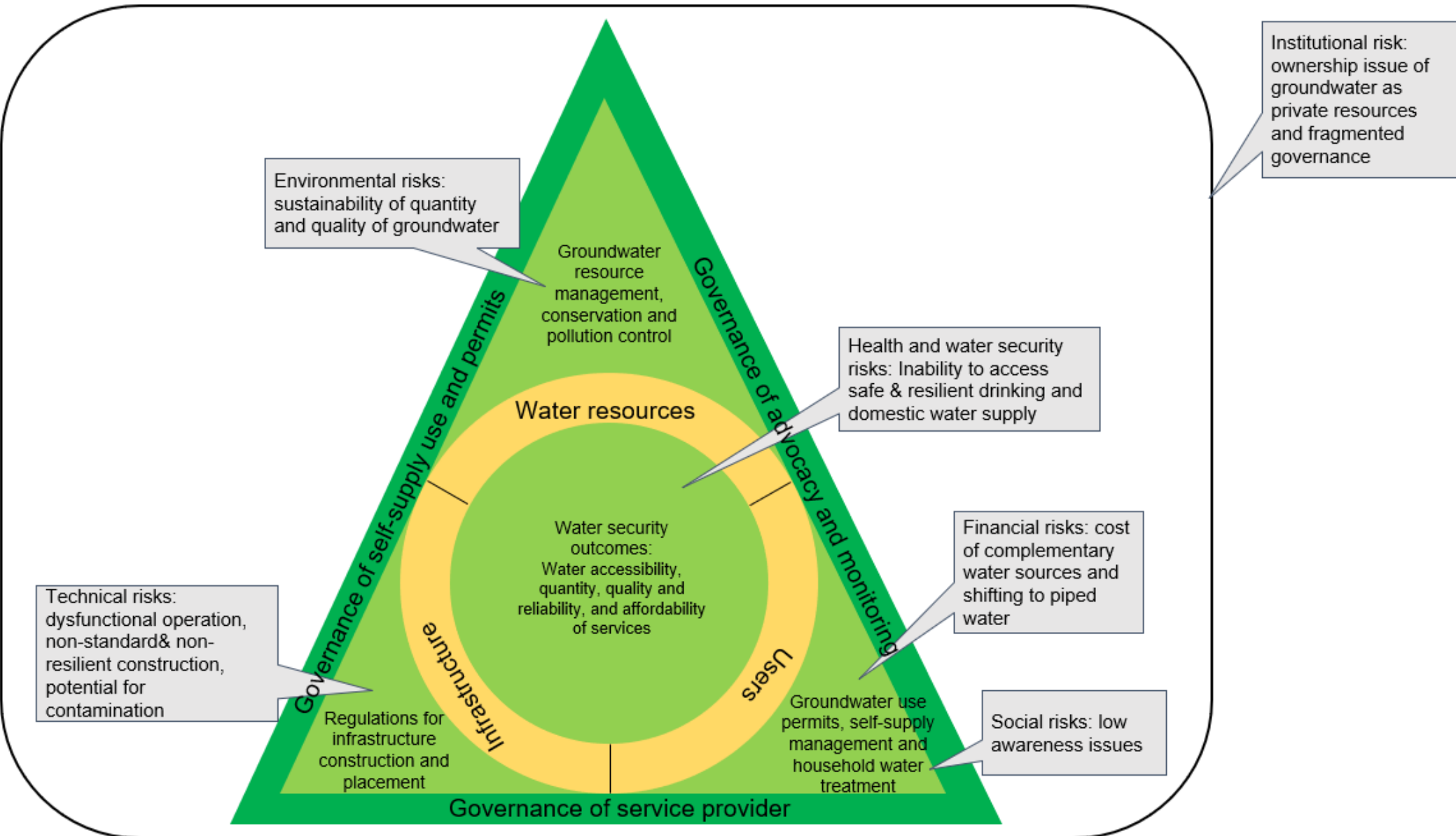
Methods:

Study case approach: Bekasi and Metro, Indonesia

Data collection:

- **Regulatory & policy review**
 - 33 national and 18 sub national regulations and policies
 - 3 national standards for infrastructure
- **Key informant interview**
 - 13 LGOs from water-related institutions
 - 1 refill water seller
 - 2 informal well diggers, 1 informal well driller
 - 6 households of each city

Self-supply Water Governance



Adapted from: Hoque et al., 2019
 Hoque, S. F., Hope, R., Arif, S. T., Akhter, T., Naz, M., & Salehin, M. (2019). A social-ecological analysis of drinking water risks in coastal Bangladesh. *Science of the Total Environment*, 679, 23-34..



Institutional risk

Governance through groundwater use and permits

Laws and regulations cover:

- Land-owners do not need permit for water for daily use, businesses do require a permit (Law 17/2019; Gov. Reg. 69/2014)
- Permission for digging well is required for business and non-business other than daily needs and public irrigation for wells less than 40 meters. (West Java Reg 1/2017)

In practice:

- Fragmented governance
- Household perceived the land they own and underneath it are their properties thus Government are unlikely to be able to control groundwater use

*“The land, It belongs to us.
No need for permission”
(Female-59 years-Bekasi)*

Environmental risk

Groundwater resource management, conservation, and pollution control

Laws and regulations cover:

- Ensure people's rights to water for daily needs and prohibited individual & business to carry out activities that pollute groundwater (LG Reg West Java 1/2017)
- Obligation to conserve & prevent pollution to groundwater (LG Reg Lampung 5/2019)

In practice:

Over-extraction is common, declining groundwater table, households deepening wells (mainly on dry season), pollution and poor water quality especially during wet season → increase long-term environmental risk

“

“Previously the depth of well was 12 meter, now it's more than 20 meter”
(Well digger in Bekasi, 2021)

Technical risk

Infrastructure and construction standard

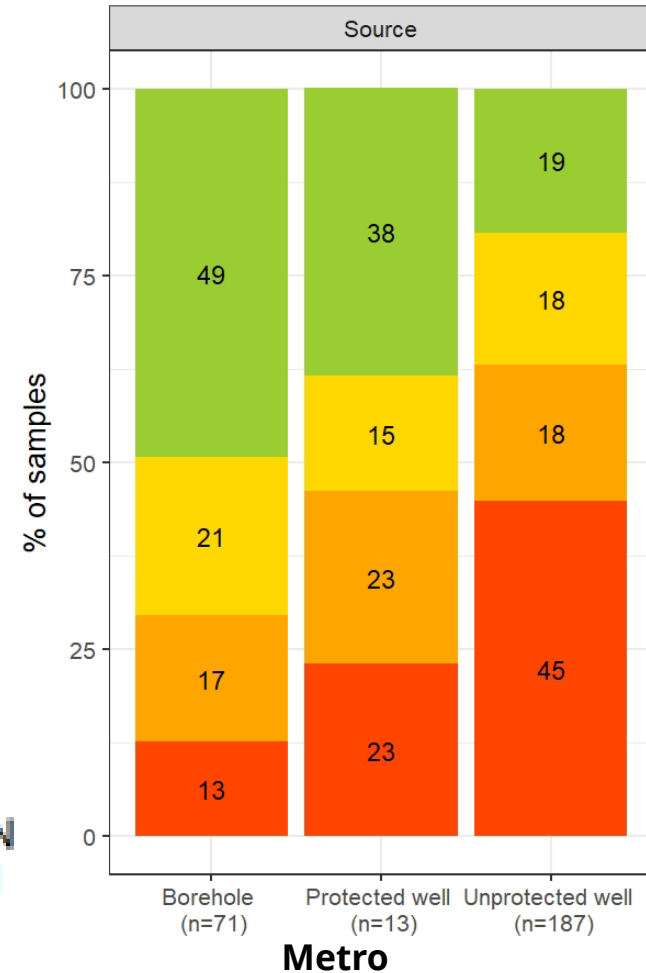
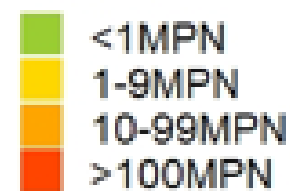
Laws and regulations cover:

- Distance from pollution source to shallow well should be more than 10 m (MPWH Reg 27/PRT/M/2016; SNI 2398:2017)
- Well should be protected (minimum standard- SPM)
- Infrastructure construction must meet the standards of SNI (MPWH)
- Workers in the drinking water sector must be certified (MPWH Reg No. 15/PRT/M/2018)

In practice:

No direct oversight of borehole and system quality for non-piped systems thus construction doesn't meet the standard

E. coli



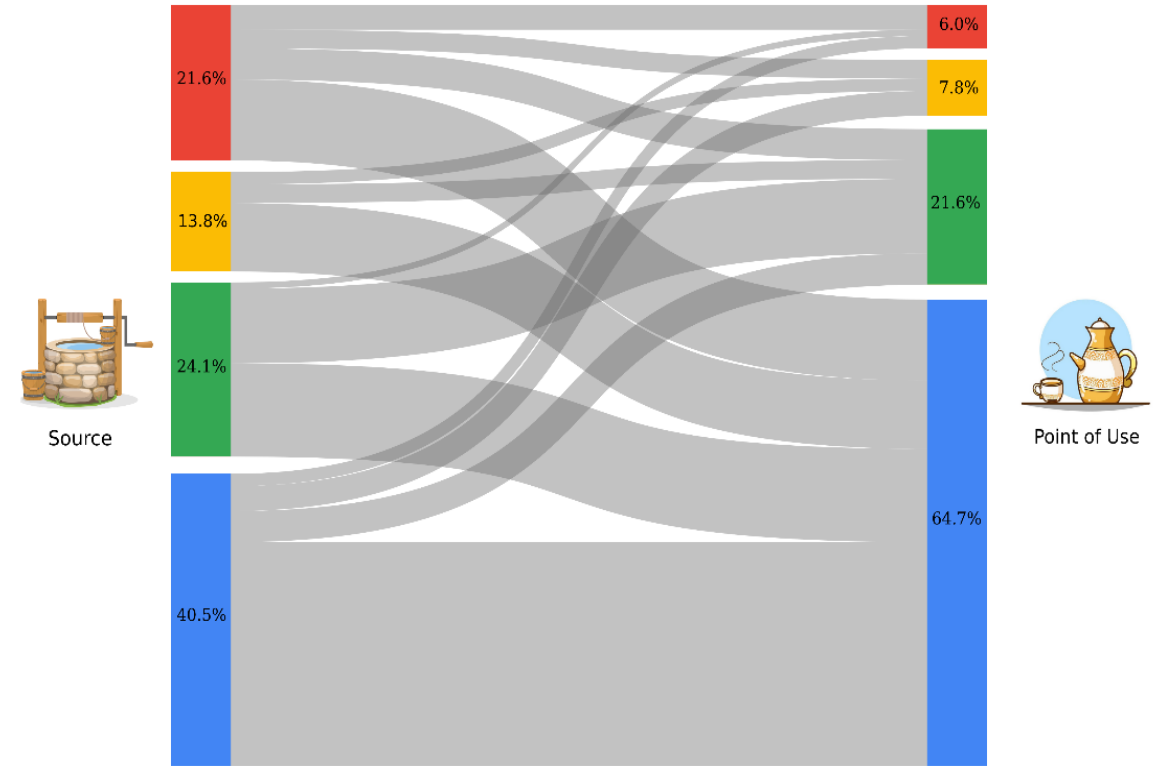
Social risk

Treatment, Storage and Monitoring by Users

Laws and regulations cover:

- Every drinking water provider must carry out internal monitoring of the quality of drinking- for non-piped systems (MoH Reg 736/2010)
- Community-Led Total Sanitation includes household water treatment and storage (HWTS)

“Now I’m lazy to look for wood, (I am) already old. (I) drink gallon water, it does not need to be boiled, directly drinkable” (Female -Bekasi).



Risk level	Low	Medium	High	Very High
<i>E. coli</i> (CFU/100 ml)	<1	1-10	11-100	>100

In practice:

- Self supply water need adequate HWTS but inappropriate practice may cause recontamination



Health and water security risks

Water security and water service delivery outcomes

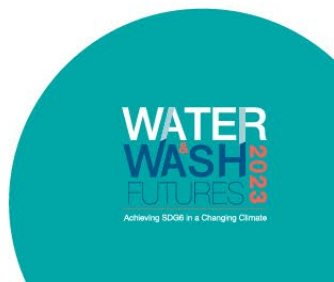
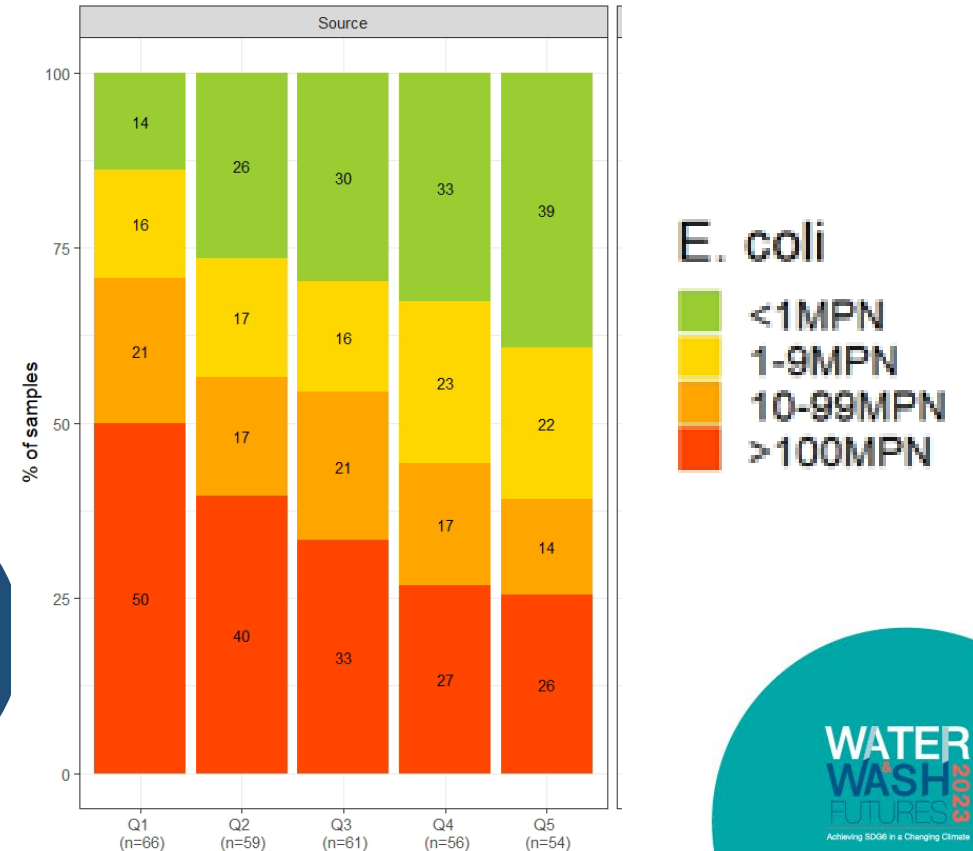
Laws and regulations cover:

- Drinking water quality must fulfil the criteria regulated by the MoH for various parameters (MoH reg 492/2010 and MoH Reg 736/2010).
- Service delivery by regional company, and community is acknowledged as operators by national regulation but not household (Gov Reg 122/2015)

In practice:

Self-supply water quality is contaminated although availability is still good

"In the past we used a dug well but now .. the water is black like sewage water" (Female-52 years- Bekasi)

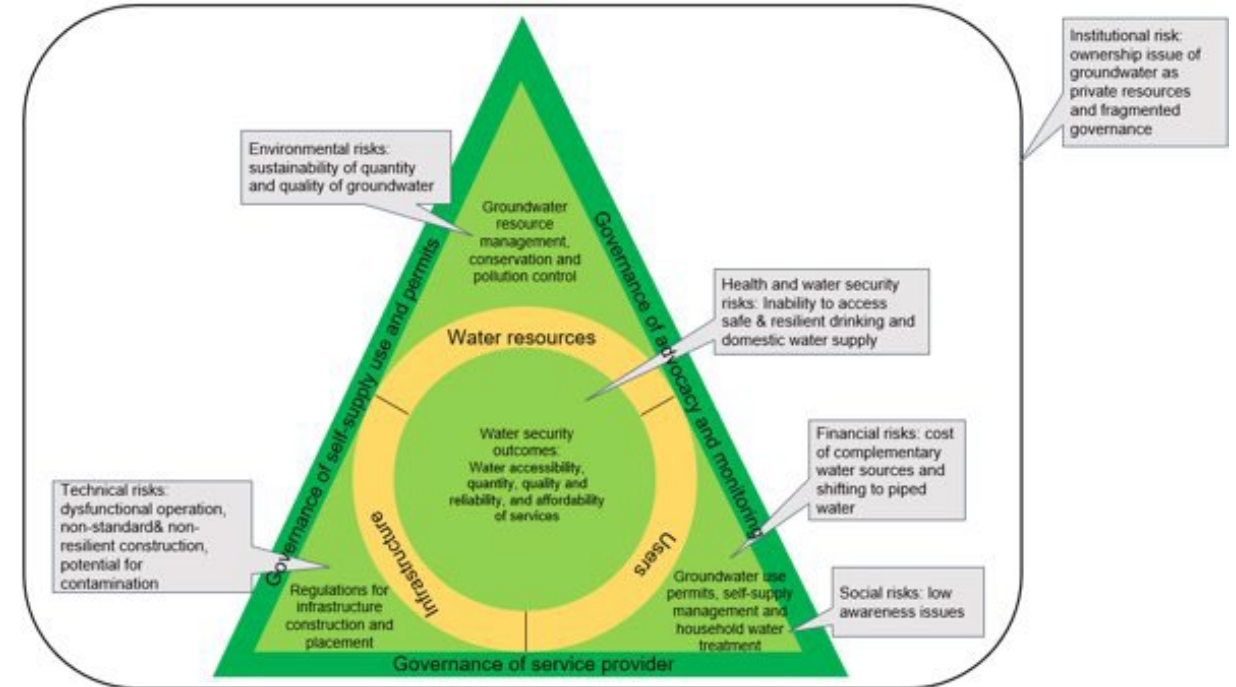


A Comprehensive Self-supply Water Governance

The current self-supply system must be transformed into an effective governance of the three main aspects of self-supply, which are **(1) water resources, (2) users, and (3) infrastructure**, shifting the perception that households have the absolute right to use groundwater, while still ensuring human rights.

Formal Government Mandate

Adequate policy, framework and regulation so one managing body is responsible in applying a risk-based approach for the three aspects



Thank you!

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