


Household self-supply:

An immense but overlooked contributor to SDG6 in Asia and the Pacific

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UTS Institute for Sustainable Futures

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1 Introduction

Self-supply

- The WASH sector often assumes that safely managed services are only piped
- Many areas lack piped water, including densely-populated low-income urban areas in Asia, and small remote islands in the Pacific
- Self-supply is a model in which individual households provide and manage their own water supply
- Self-supplied water is
  - Often a private household investment
  - Unregulated
  - Not well understood

Study aims

1. **Prevalence:** Estimate the **number of people relying on self-supply** in South Asia, East Asia, and the Pacific

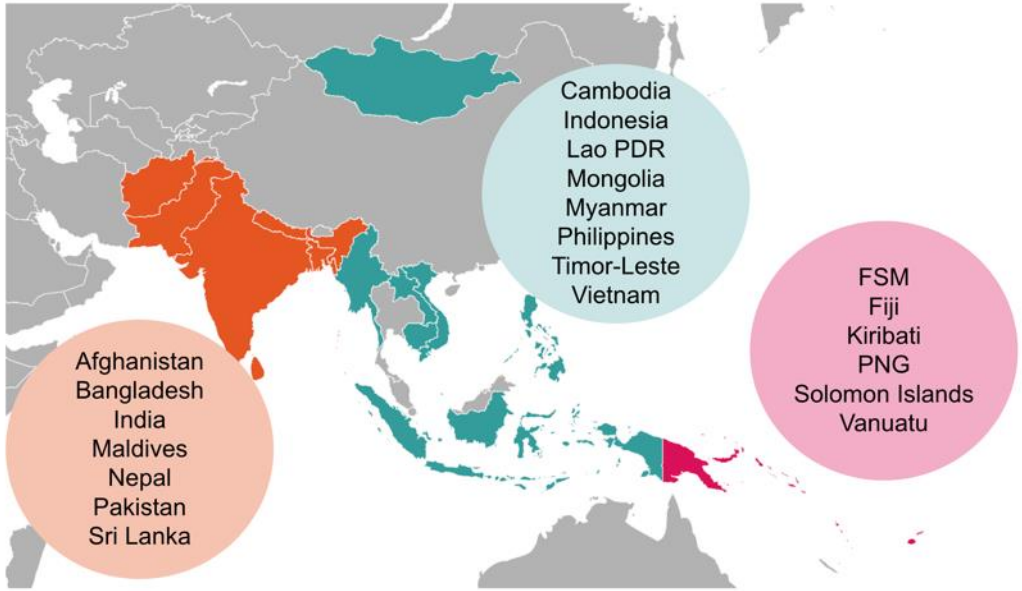
2. **Equity:** Characterise the **wealth status** of self-supplying households

3. **Service levels:** Quantify the contribution of self-supply to **coverage of safely managed drinking water services**

4. **Policy:** Assess the degree to which **governments formally engage** with self-supply

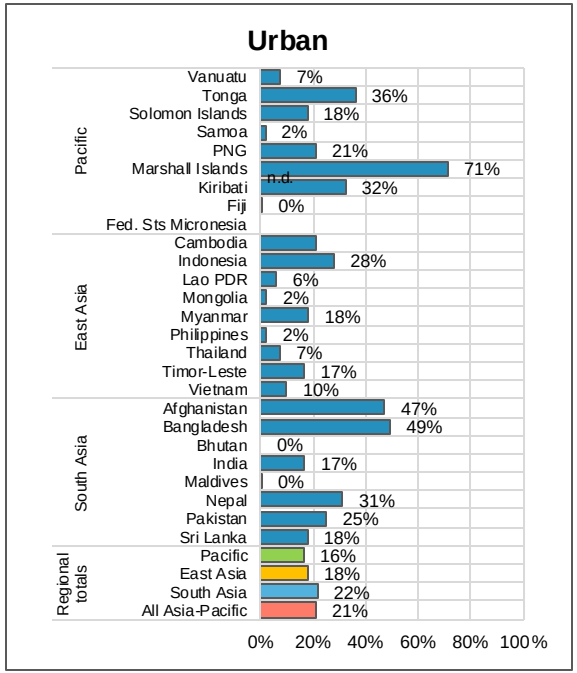
Methods

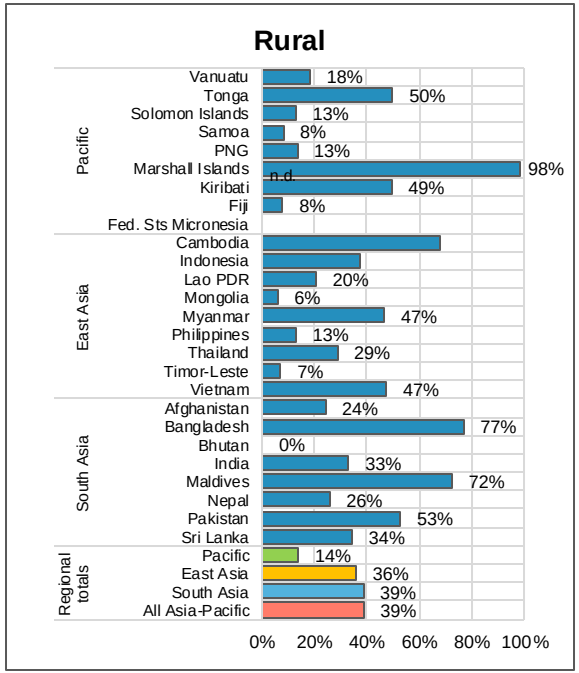
- 21 countries across the 3 regions
- Analysis of >80 nationally representative publicly available datasets (e.g. DHS, MICS, Censuses)
- Review of national policies, plans and guidelines
- Self-supply defined as groundwater and rainwater sources located on the premises

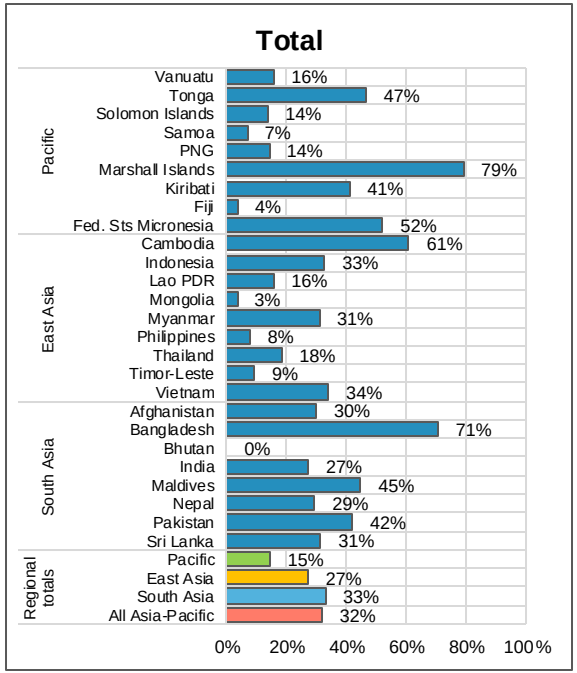


2 Key findings

A third of households in Asia and the Pacific self-supply their drinking water, with prevalence highest in rural areas







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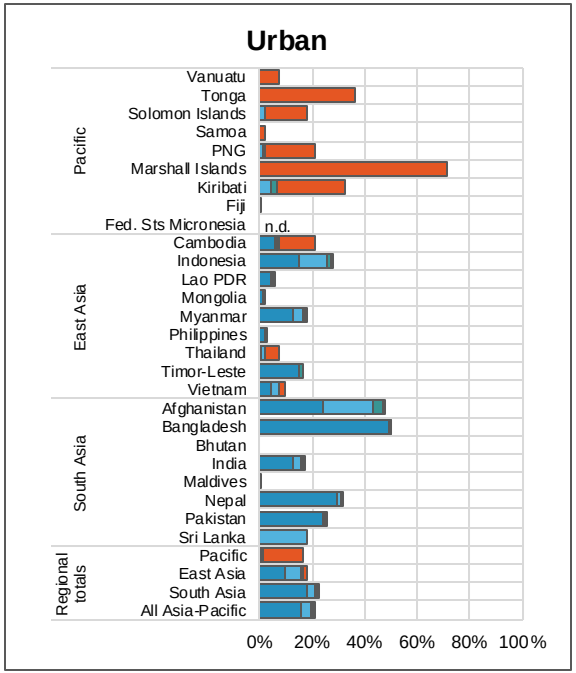
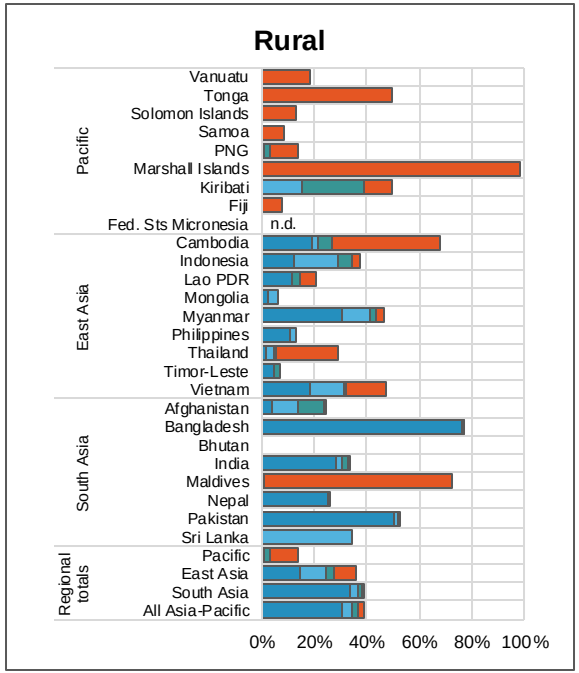
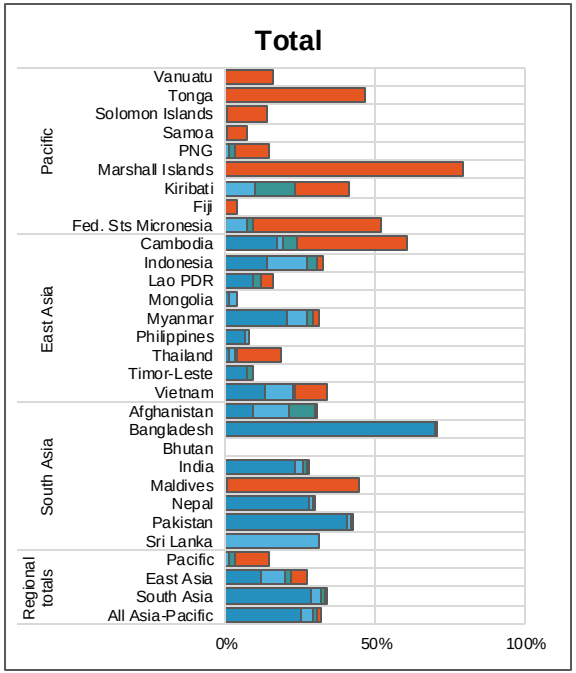
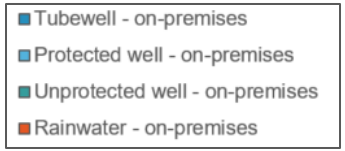
The type of source of self-supply varies by country and by urban or rural context









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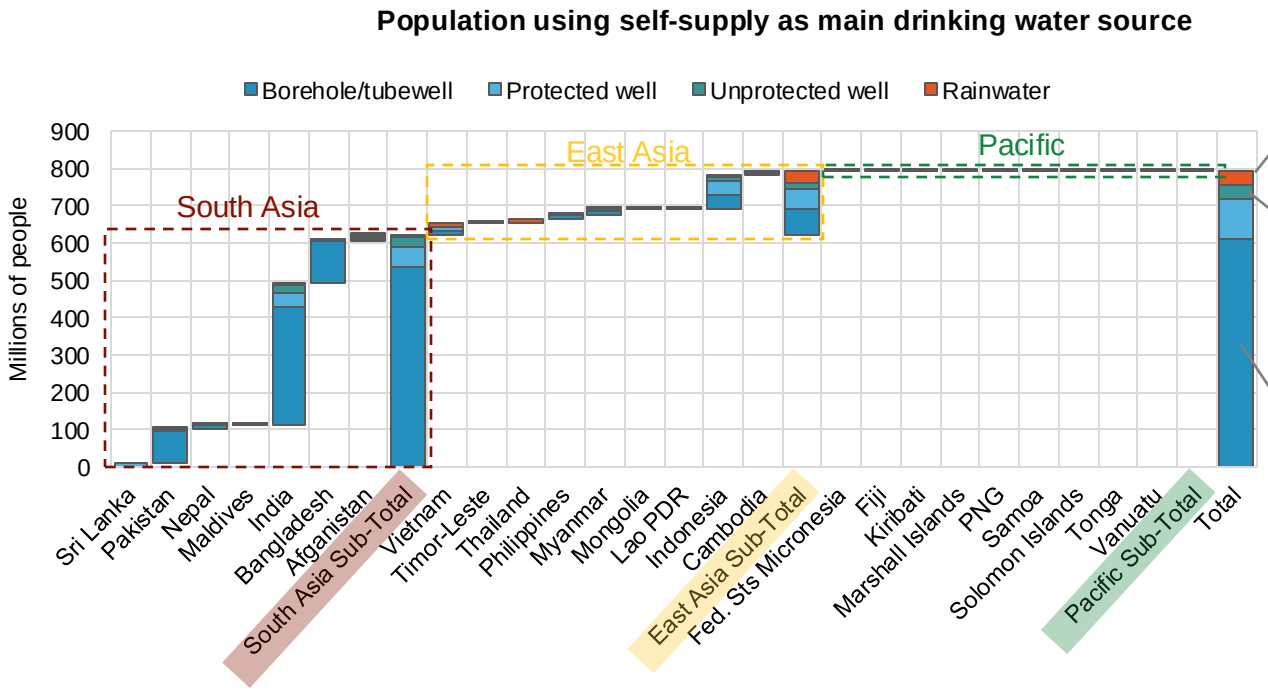
~800 million people in Asia and the Pacific self-supply their drinking water, three-quarters of whom live in rural areas

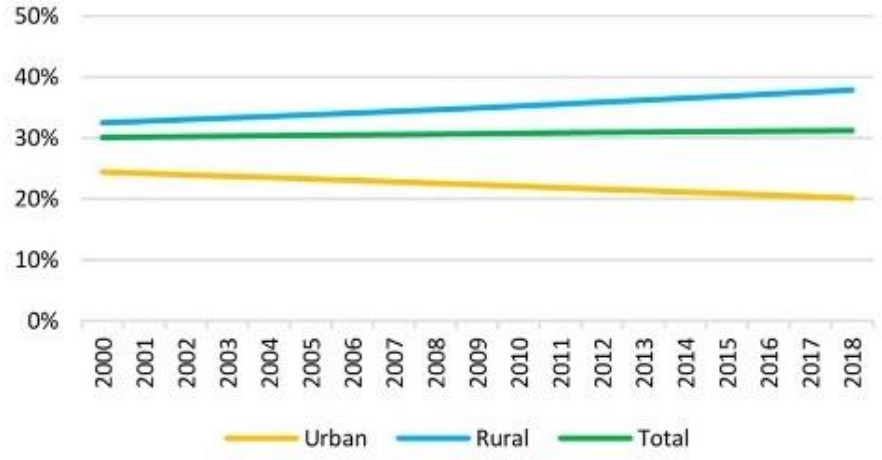


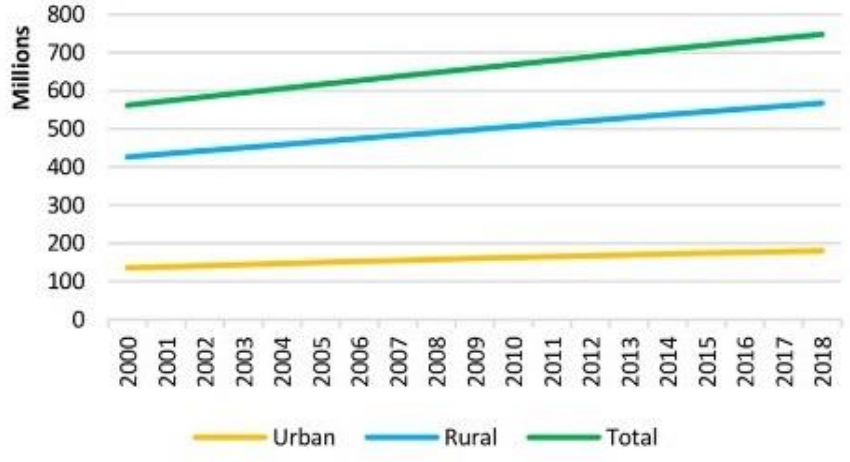
~39 million people use on-premises rainwater collection for drinking

~146 million people use on-premises dug wells for drinking

~611 million people use on-premises tubewells for drinking

The number of people self-supplying their drinking water in Asia and the Pacific has been increasing by ~10 million people each year



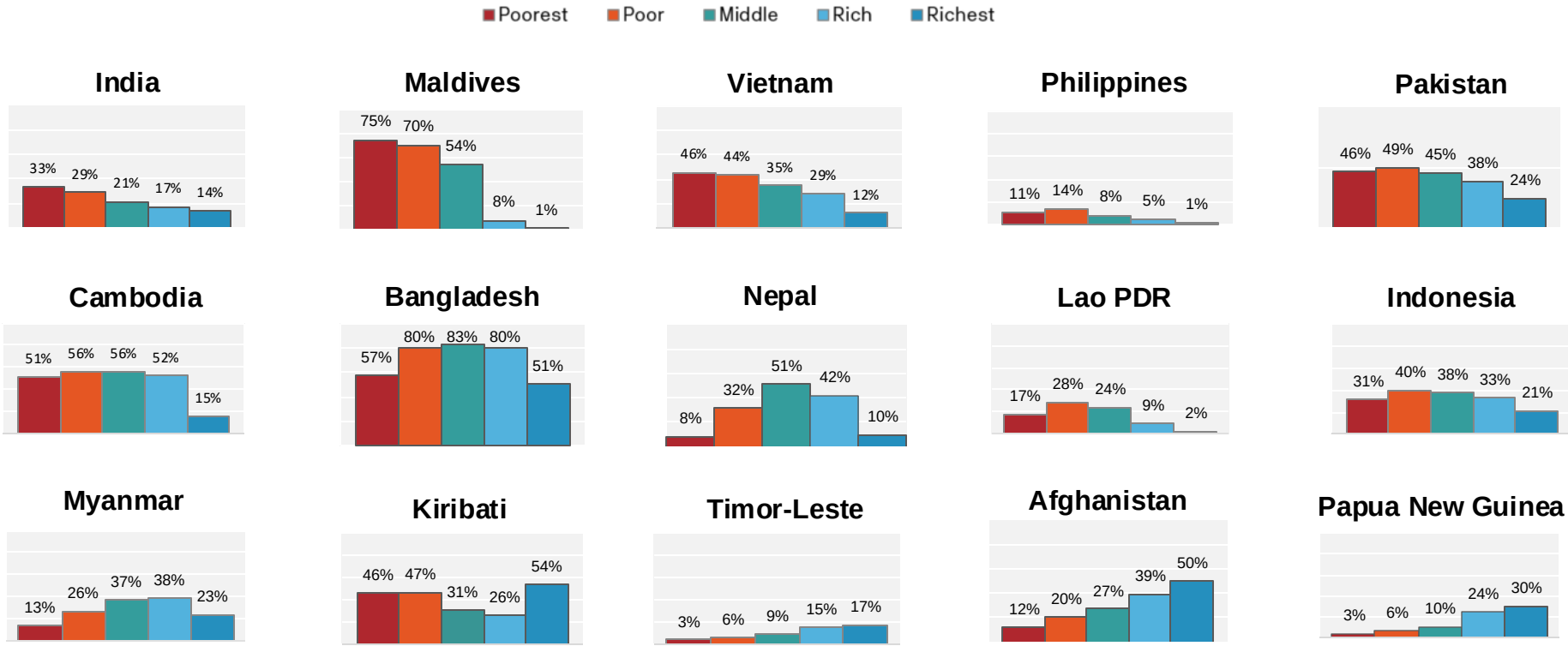


Households investing **> US$300m** each year in new self-supply systems

Self-supply systems in the Asia-Pacific region represent more than ~ **US$20b** in household investment

Foster, T., Priadi, C., Kotra, K. K., Odagiri, M., Rand, E. C., & Willetts, J. (2021). Self-supplied drinking water in low-and middle-income countries in the Asia-Pacific. NPJ Clean Water, 4(1), 1-10.

The relationship between self-supply and wealth differs across countries



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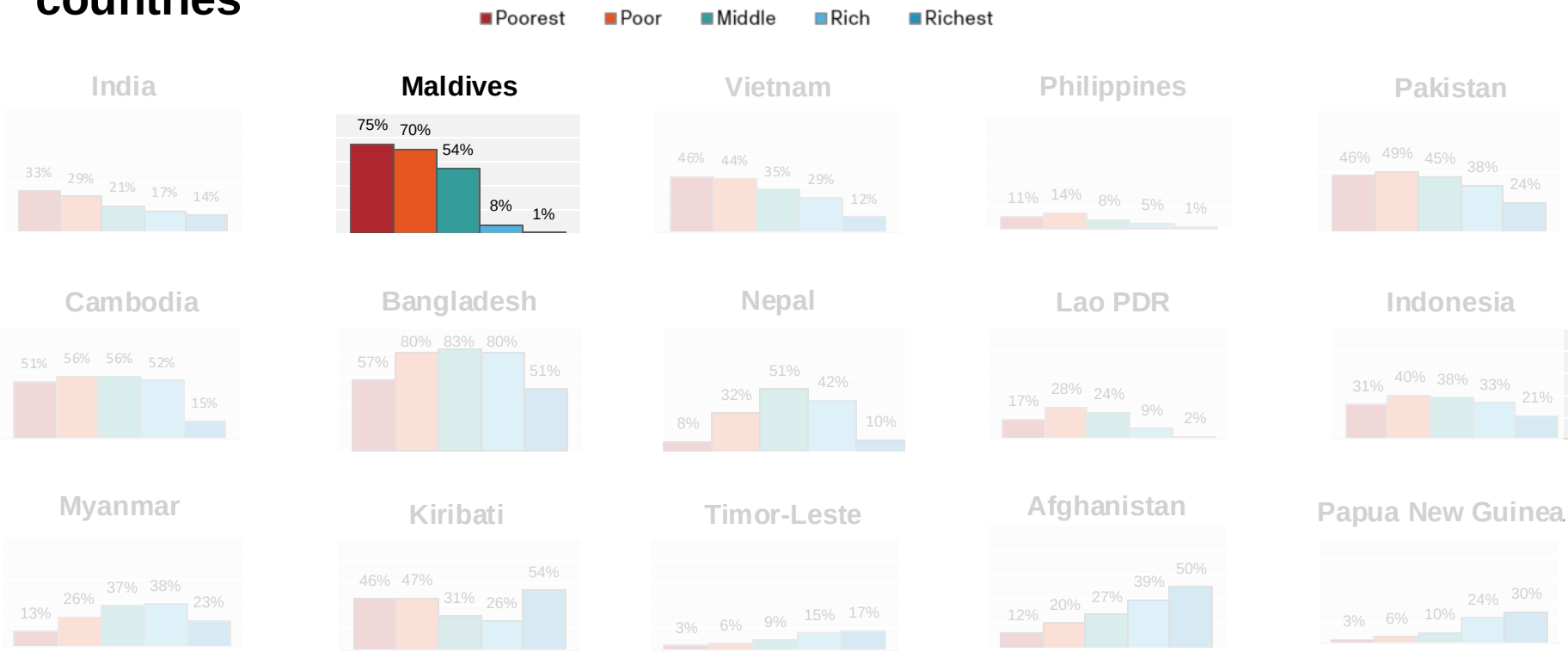

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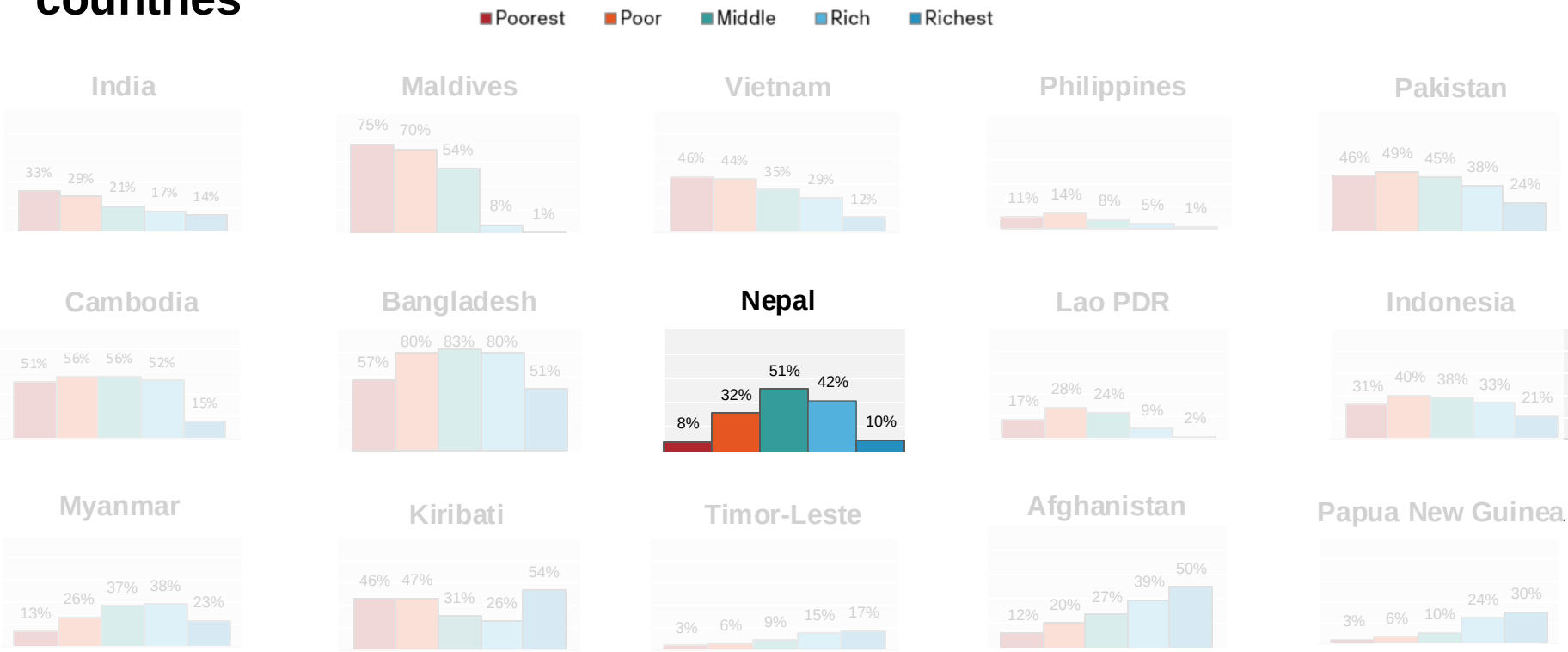

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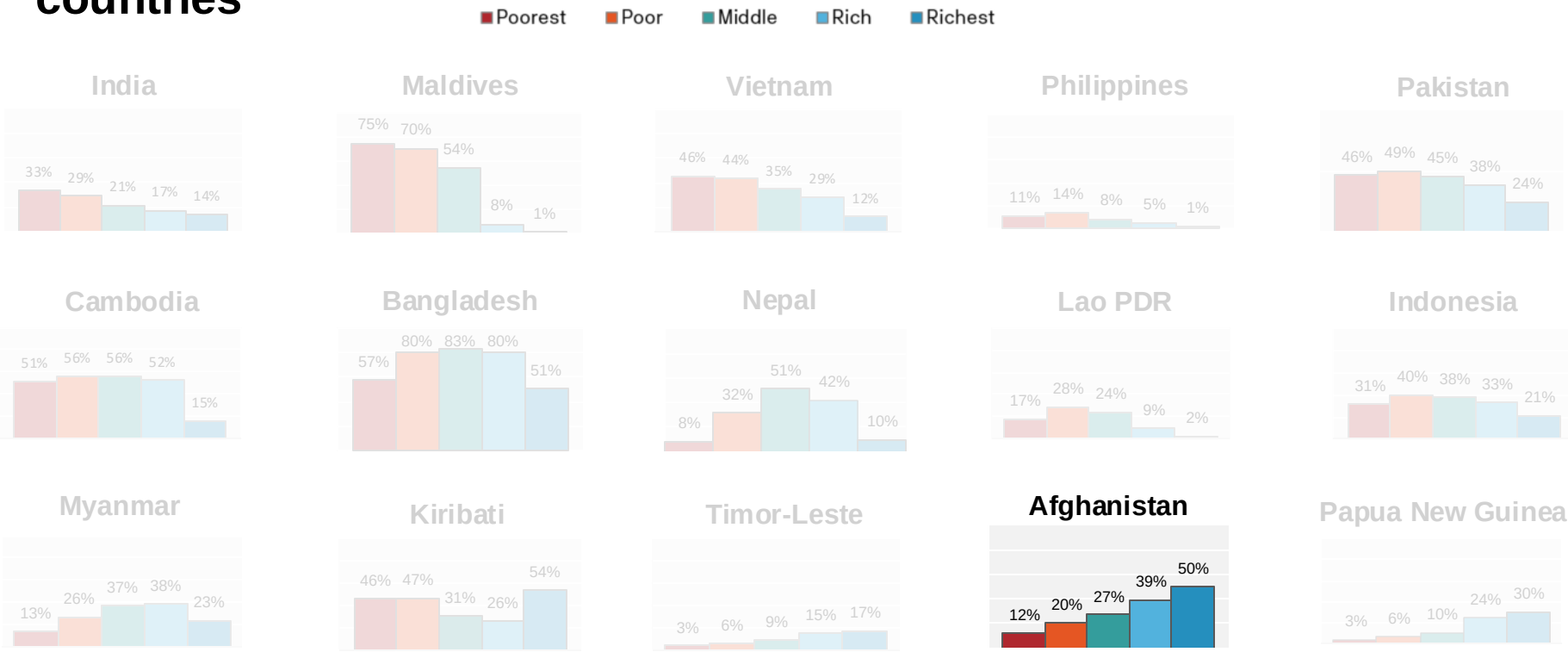

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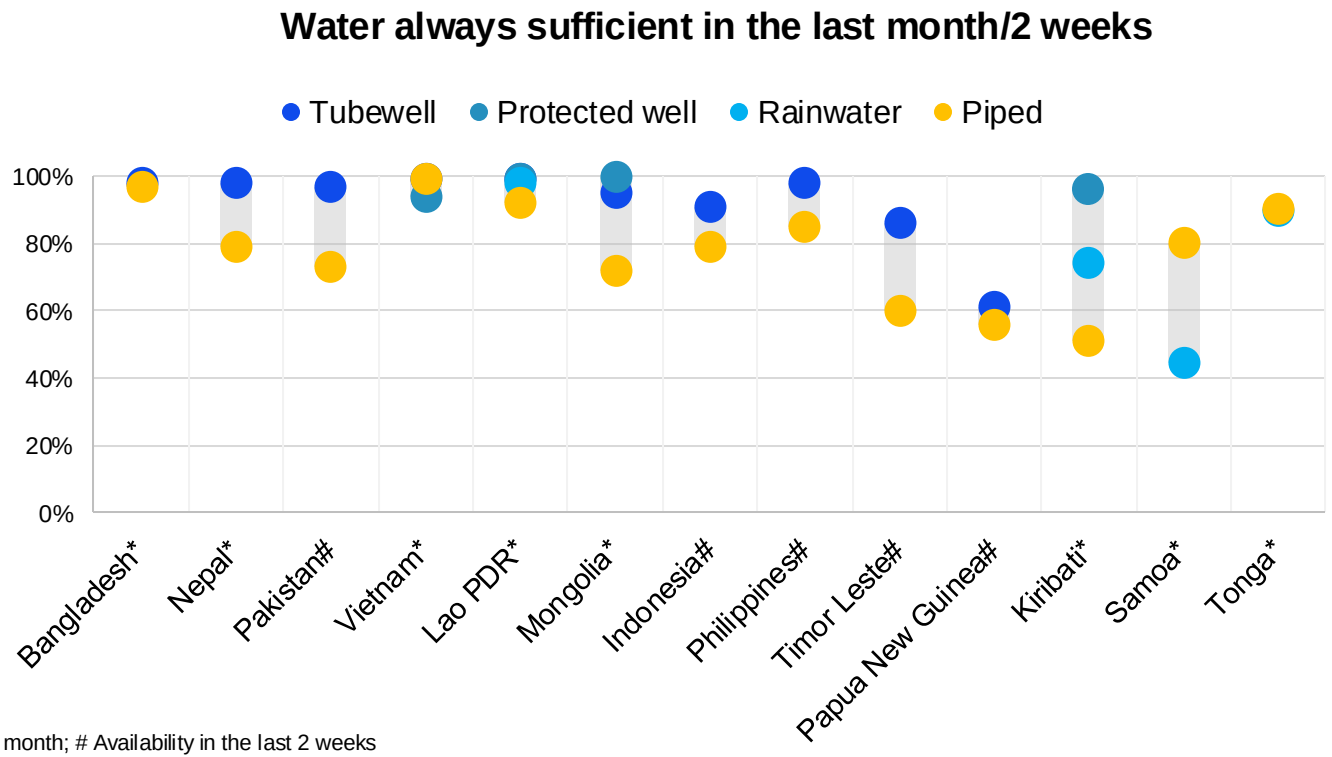
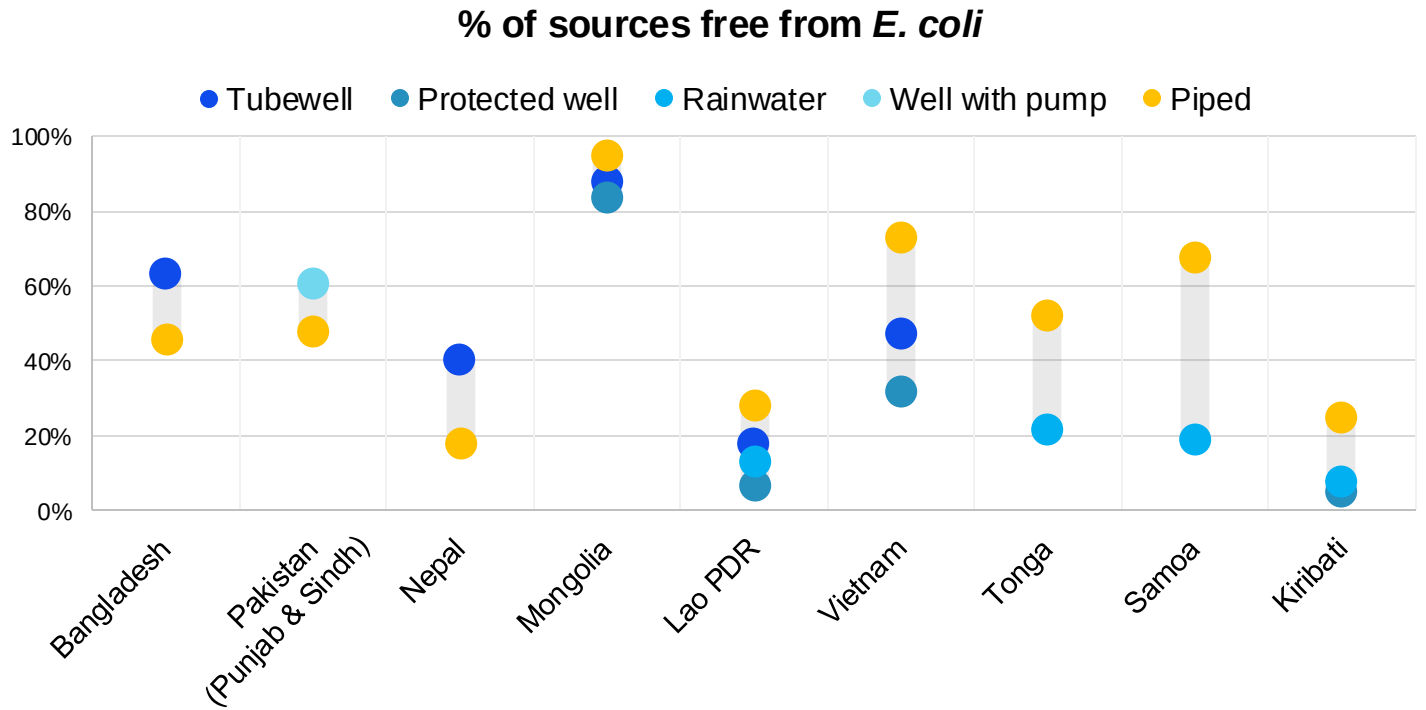
Self-supply often provides a more reliable service than piped supplies



* Availability in the last month; # Availability in the last 2 weeks

Data sources: Pakistan DHS (2017-18), Nepal MICS (2019), Bangladesh MICS (2019), Vietnam MICS (2020-21), Timor Leste DHS (2016), Philippines DHS (2017), Mongolia MICS (2018), Lao PDR MICS (2017), Indonesia DHS (2017), Kiribati MICS (2018-19)

Microbial quality of self-supplied water seems worse than piped water in some countries, but better in others



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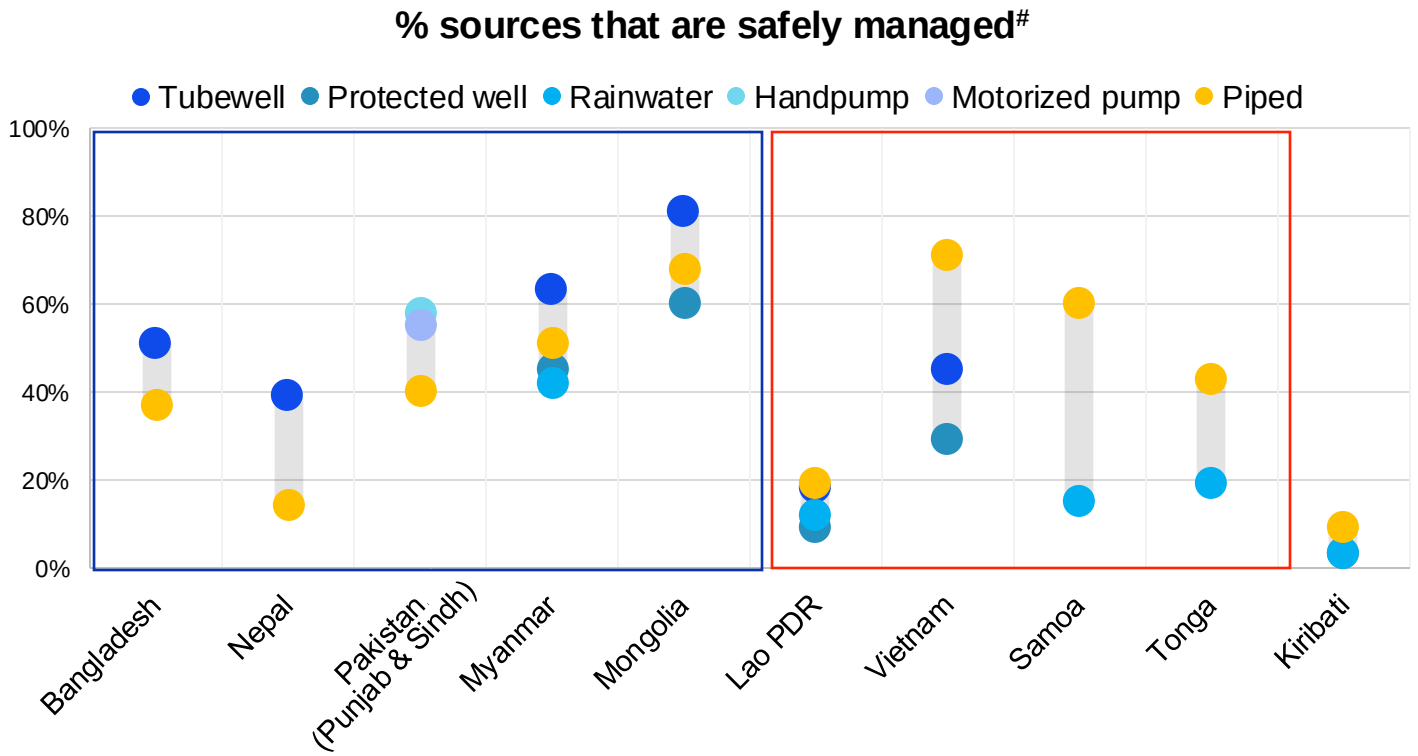
In half of the countries with available data, self-supply is more likely to deliver a ‘safely managed’ water service than piped supply



Note: #Safely managed defined as accessible on the premises, available when needed and free from contamination
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Safely managed water services are received by

58% Of households with improved self-supply

45% Of households with piped water

2.7 times more likely to receive safely managed water from self-supply than piped water

Self-supply is not often recognised in policy or subject to regulation

Country	Recognition	Support	Water quality standards	Construction standards
Afghanistan	☒	☒	☒	☒
Bangladesh	☒	☒	☒	☒
India	☒	☒	☒	☒
Maldives	☑	☑	☒[#]	☒[#]
Nepal	☒	☒	☑	☒
Pakistan	☑	☑	☑	☒
Sri Lanka	☒	☒	☒	☑
Cambodia	☑	☒	☒	☑
Indonesia	☒	☒	☒	☑
Lao PDR	?	?	?	?
Mongolia	?	?	?	?
Myanmar	☒	☒	☒	☒
Philippines	☑	☑	☑	☒
Timor-Leste	?	?	?	?
Viet Nam	☑	☒	☒	☒
Fiji	☑	☑	☒	☑
PNG	☒	☒	☒	☒
Solomon Is	☑	☑	☒	☒
FSM	☑	☒	☒	☒
Vanuatu	☑	☑	☒	☑

[#]Plans underway in the Maldives to develop water quality standards and construction standards for self-supply

Examples of self-supply (or private water sources) being acknowledged in policy documents

Pakistan

National Drinking Water Policy: *"rainwater harvesting at household and local levels will be promoted to augment municipal water supplies"*

Fiji

Rainwater tank subsidy scheme: Since 2016, the Government of Fiji has allocated FJ$18m (~ US$8m) in annual budget for a subsidy scheme to support households to buy a household rainwater tank

Cambodia

National Action Plan for Rural Water Supply, Sanitation and Hygiene (2019–2023): includes an indicator of *"number of household rainwater harvesting systems in compliance with the Ministry of Rural Development's rural water supply technical design and construction supervision manual"*.

Philippines

Water Code: households are required to register their source with the National Water Resources Board, and this might require payment of a fee.

Solomon Islands

The National Water Resources and Sanitation Policy: includes an objective to increase household rainwater harvesting.
National Water and Sanitation Implementation Plan 2017 – 2033: t proposes a revolving loan fund established for households to purchase rainwater harvesting and storage equipment.

Vanuatu

National Water Policy (2017-2030): recognises households as potential asset owners and seek to improve access to finance for households to access rainwater tanks.
Public Health Act: requires that household-owned rainwater tanks (a) comply with public health standards, (b) be kept clean and protected from contamination, and (c) have a sufficient cover and are properly protected or screened to prevent mosquitoes.

Sri Lanka

Plan of Action for the Implementation of Water Quality Surveillance System in Sri Lanka: *"The responsibility of surveillance of the individual private wells will lie with the owner of the facility. A communication strategy must be developed to sensitize the citizens on the issue of water quality, and on the need of conducting periodic maintenance and care. The MoH, through PHIs and Midwifes, will have a central role on this regard….A standard, simple Water Safety Plan for private rural water points will be prepared, to be implemented by the users themselves…"*

Vietnam

National Strategy for Rural Clean Water Supply & Sanitation by 2030 with a Vision Towards 2045 (No. 1978/QD-TTg): *"household-scale solutions […] in areas where there is no access to water supply"*, including *"rainwater storage tanks and other forms of water storage…"* and a *"[g]uide to testing and monitoring water quality at household scale"*.

3 Conclusions

NCERWASS – Ceramic rainwater containers in Viet Nam

Conclusions

- **High prevalence** of self-supply, with numbers **growing each year**
- Potential of self-supply to **provide safely managed drinking water**, though there are **risks in some contexts**
- **Private household investment** has delivered the majority of safely managed water services in numerous countries.
- Self-supply **remains underappreciated**, with policy documents in many countries failing to acknowledge its existence.
- Recognizing and harnessing these hidden investments could **accelerate progress towards the SDG target 6.1**, which governments and development partners alone may not reach by 2030.

Upcoming outputs

- 21 self-supply country factsheets
- 3 Sub-regional workshops
- 3 Sub-regional briefs

Thanks!

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