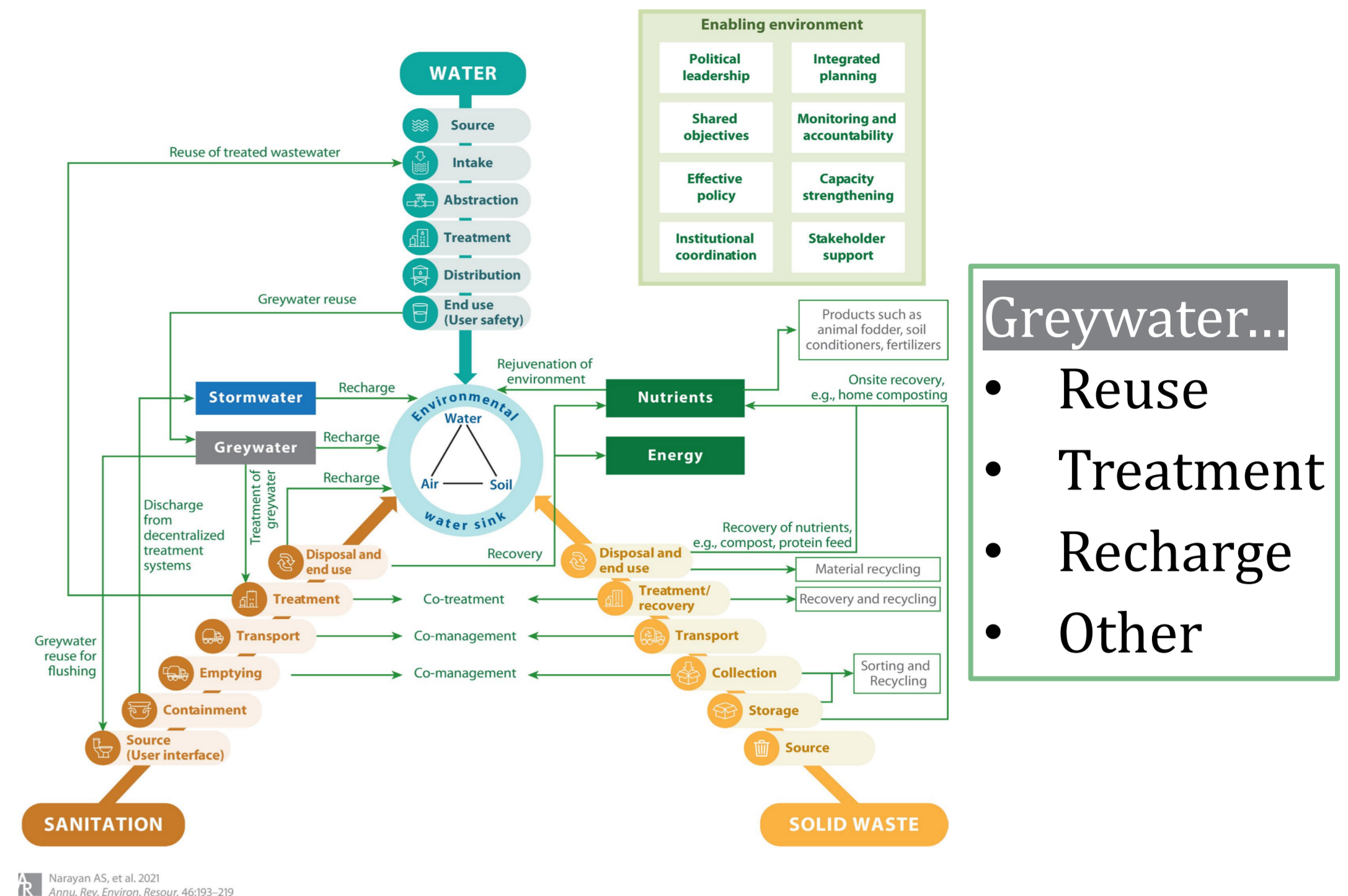# Greywater management in Khulna City, Bangladesh

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Introduction

- "Greywater" - domestic wastewater from activities like cooking, cleaning, and bathing.
- A variety of water sources, and locations are used for domestic activities.
- Globally studies report 14-255L/person/day of greywater is produced.
- This first study from my PhD explores household greywater management practices – from generation to disposal.

What greywater management options are there?

Narayan AS, et al. 2021
Annu. Rev. Environ. Resour. 46:193–219

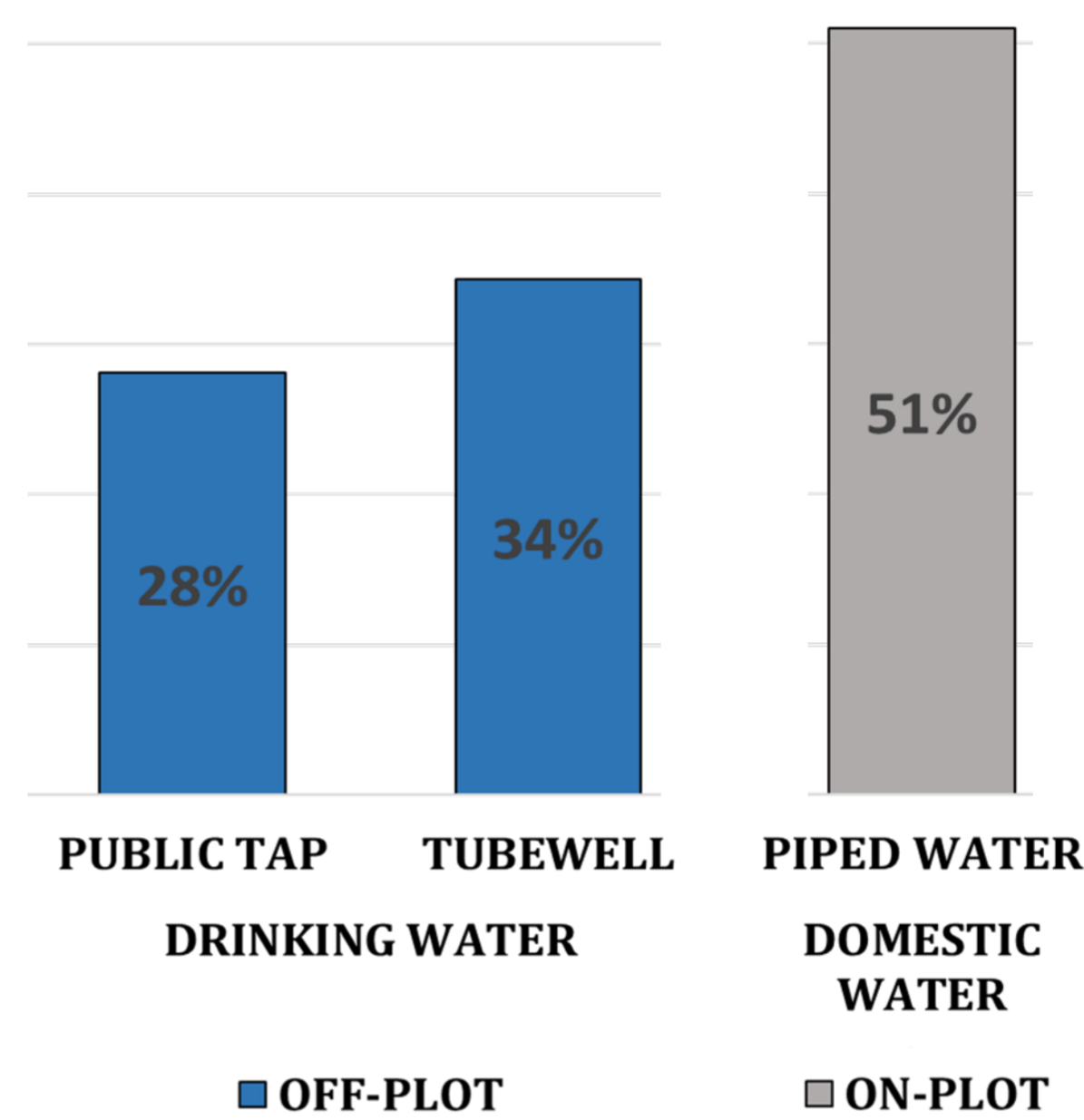Greywater...
- Reuse
- Treatment
- Recharge
- Other

Method

- Survey of low-income households (n=192) in Khulna City;
- Reporting domestic activities, water usage and greywater disposal;

Water sources & location of activities

DRINKING WATER: PUBLIC TAP 28%, TUBEWELL 34%
DOMESTIC WATER: PIPED WATER 51%
■ OFF-PLOT ■ ON-PLOT

Households use different...
- water sources for drinking and domestic purposes;
- locations for dishwashing, laundry and bathing – either on-plot (47%), or off-plot (37%).

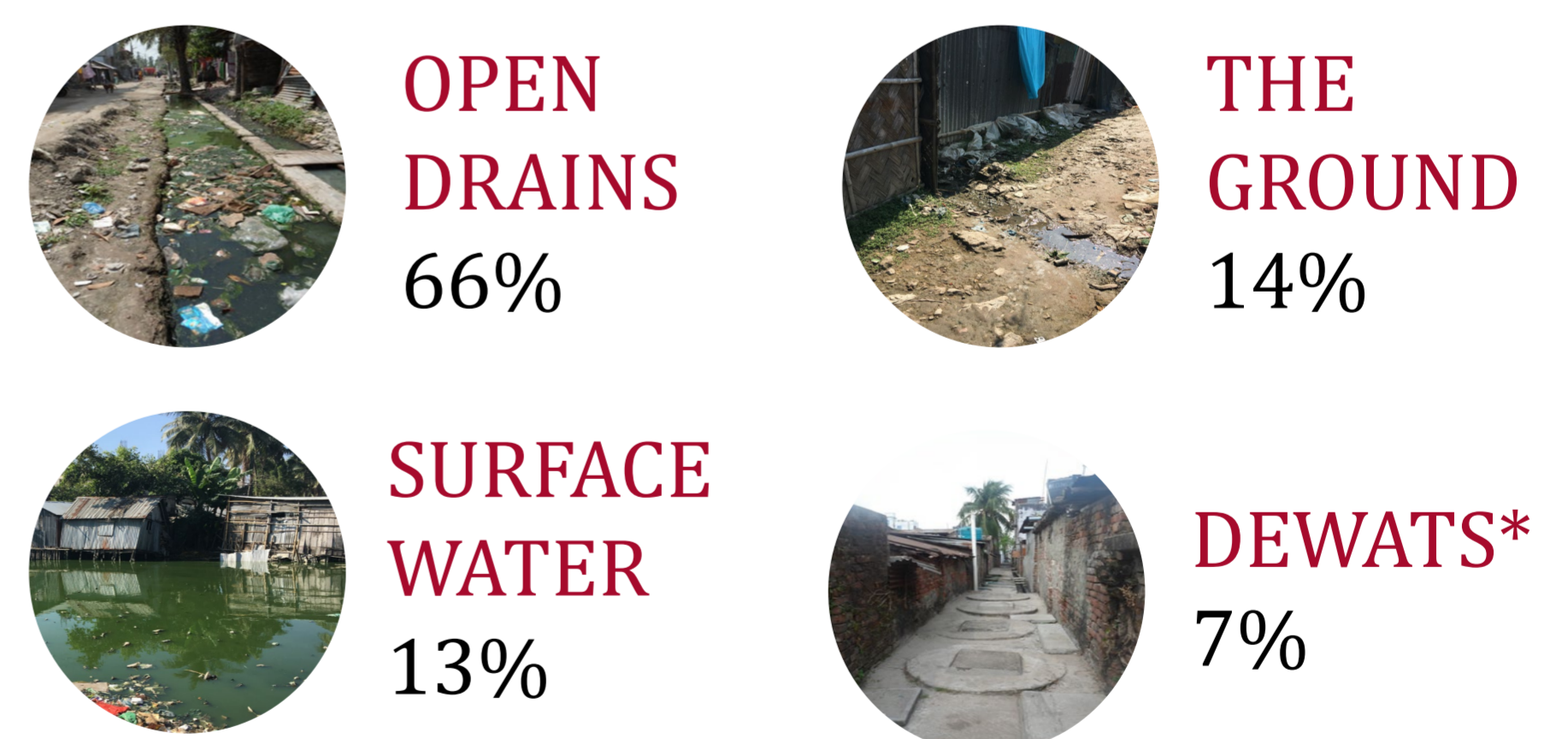## Daily activities & greywater volumes

Mean greywater = ~80L/person/day

- BATHING 37.4L
- DISHWASHING 11.3L
- WUDU* 9.8L
- HANDWASHING 9.5L
- LAUNDRY 9.4L
- MOPPING 2.5L
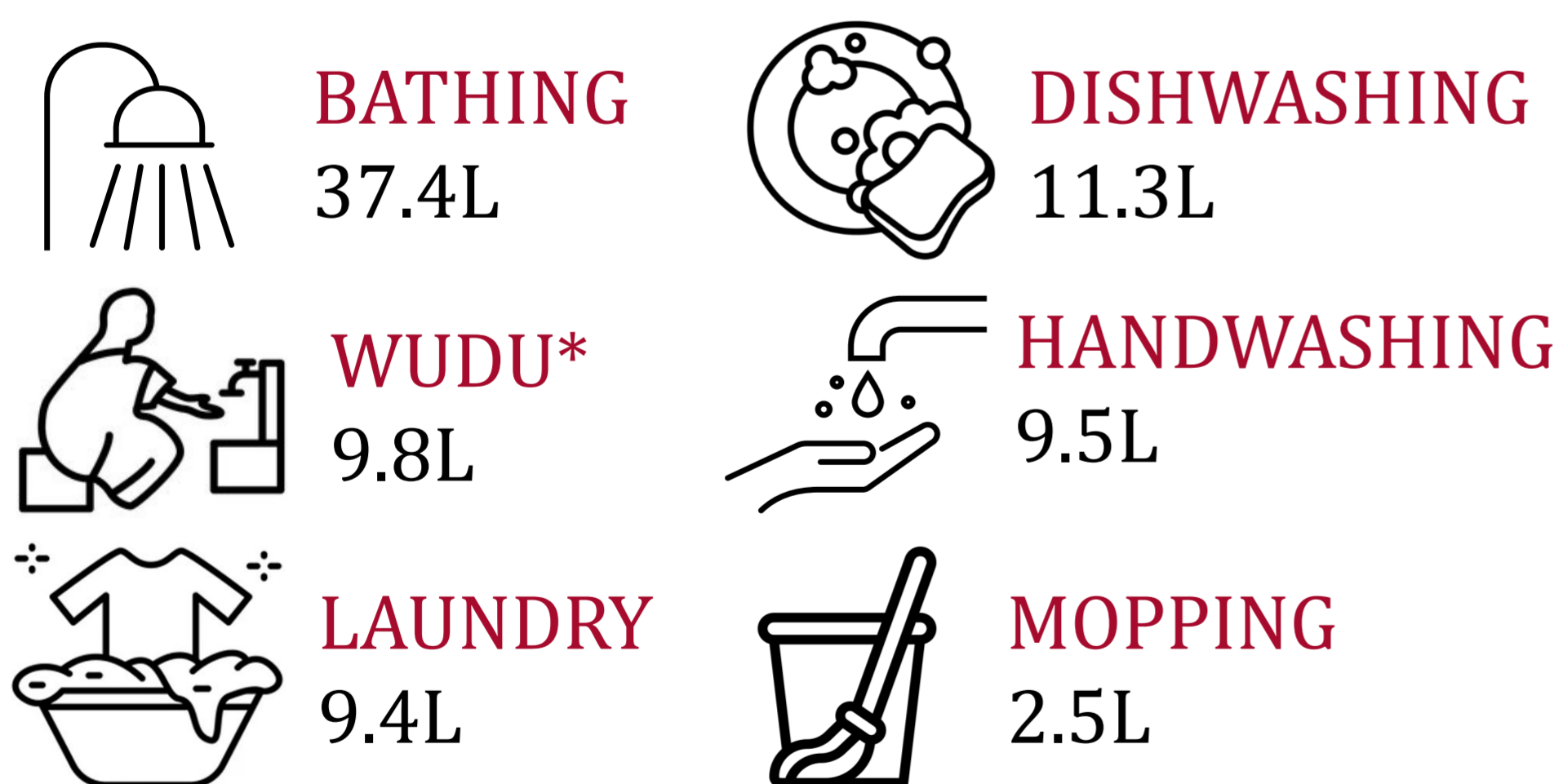
Wudu: an Islamic practice of washing before worship

Greywater disposal locations

Households dispose untreated greywater to....

- OPEN DRAINS 66%
- THE GROUND 14%
- SURFACE WATER 13%
- DEWATS* 7%

DEWATS: Decentralised Wastewater Treatment System

Conclusions

- Our findings indicate that large amounts of greywater are disposed untreated, potentially harming public health, soil, and water quality.
- For decision-makers to implement better greywater management in Khulna, further quantification of the risks, implications, and consequences is required.

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