



CRBOM Small Publications Series No. 24

Water use by households in Banjarsari, Surakarta

by

Husnia Luluk Farida

Center for River Basin Organizations and Management,
Solo, Central Java, Indonesia

June 2010

The '*Small Publications*' are intended for knowledge-sharing and dialogue. In some cases they may present facts, information and lessons learnt. In other cases, they provide news, opinions, ideas or open questions for discussion.

They express the opinions of the author(s) and not those of CRBOM.

They can be freely copied and disseminated.

Contributions are welcome, in English or in Bahasa Indonesia.

The author:

Husnia Luluk Farida, student at SMUN 4 High School, Surakarta,
nia.suneo@gmail.com

The present paper is an extract from her winning entry in a national essay contest for high school students held by Water Resources Research and Development Center, Research and Development Agency, Ministry of Public Works

CRBOM
Center for River Basin Organizations and Management,
Solo, Central Java, Indonesia
www.crbom.org
info@crbom.org

Contents

Acknowledgement	i
Summary	ii
Location map	ii
1 Introduction	1
2 Background	1
3 The survey and its findings	2
4 Discussion	6
5 Conclusion	6
References	6
Websites	6
Appendix 1: Survey questionnaire	7

Acknowledgement

The author expresses her gratitude to her teachers for guidance and support, and to the respondents who shared their knowledge for the purpose of the study. She respectfully dedicates the study to her alma mater, SMUN 4 State Senior High School, Surakarta

Summary

Affordable and sustainable access to clean water is essential to any household, whether in urban or rural areas. A good water efficiency can contribute to the conservation of a finite and precious resource to the benefit of future generations.

The present paper presents a small survey of water uses, habits, awareness and attitudes of urban households in Surakarta (or Solo), Central Java.

The survey was based on a questionnaire with 20 questions. 12 of these were rated according to their implications for the household's water efficiency. Hereby, 17 percent of the households were classified as *'very efficient'*, 69 percent as *'efficient'*, 14 percent as *'wasteful'*, and none as *'very wasteful'*.

Households that were connected to the public distribution network had an efficiency that was somewhat below average. The same was the case for households that own a water tank. This confirms that better access to water - in itself a clearly positive development - also means higher consumption.

The water efficiency of households will improve when people are aware of why it is important to save water.

Location map



1 Introduction

Clean water is a basic need for a healthy life. Affordable and sustainable access to clean water is essential to any household, whether in urban or rural areas.

The present paper presents a small survey of water uses, habits, awareness and attitudes of urban households in Surakarta,¹ Central Java.

2 Background

Water for urban households in Indonesia

Indonesia has a population of around 232 million people (2010) and a population growth of 1.7 percent per year.

The population is unevenly distributed. Java and Bali represent 7 percent of the land area and are home to nearly 60 percent of the population, who share less than 5 percent of the country's water resources.²

The water resources are shared between urban and rural households, irrigation, and industries. Both surface water and groundwater are used for urban supplies. The water availability for households is affected by

- lack of raw water;
- raw water sources contaminated by pollution; and
- lack of capacity for treatment and distribution.

Some 36 percent of the urban population have access to piped water, but it is not safe for drinking.³

Figure 1: A household well in Banjarsari



¹ Surakarta is also named Solo

² Agus S K and others (Jul 09)

³ ADB (May 08)

Water for households in Surakarta

Public water supply in Surakarta is provided by PDAM,⁴ covering 55 percent of the population (of around half a million people). Raw water is drawn from a spring (in Cokrotulung, near Klaten) and from 21 deep wells.

In 2006, the water demand within PDAM's network was 70 l/person/day.

Water efficiencies of households

The water efficiency of households depends on

- access to water;
- the price of water;
- user habits: For which purposes water is used - drinking, cooking, washing, cleaning, watering of a garden - and how much; and
- whether people give attention to saving water.

Figure 2: Community tank provided by PDAM during a water shortage



3 The survey and its findings

Purpose

The purpose of the survey was to learn about the use of water for households, and about people's habits, attitudes and awareness of the benefits of a high water efficiency, in support of a long-term vision of a water-saving society.

Coverage

The survey was conducted in January 2010. It covered 95 households in 10 villages in Banjarsari District, Surakarta, Central Java. The average household size was 4 persons. Households get their water either from the public network or from shallow groundwater wells (mostly one for each household, but sometimes shared).

⁴ PDAM: Perusahaan Daerah Air Minum, public water utility

Figure 3: Location of the study area



Questionnaire

The survey was based on a questionnaire (attached as Appendix A).

Water efficiency score and rating

12 of the 20 questions were given a score from 0 to 5, reflecting their implications for the household's water efficiency. Hereby, the maximum score (for maximum efficiency) became 60. The results were classified as shown in the table below. No households were classified as 'very wasteful'.

Figure 4: Tap water from the piped network



Table 1: Water efficiency of households

Score	Category	Percent
0 - 15	Very wasteful	0%
16 - 30	Wasteful	14%
31 - 45	Efficient	69%
46 - 60	Very efficient	17%

Findings

A summary of the findings is shown below.

Table 2: Overview of findings

58 percent of respondents were covered by the public distribution network
31 percent of respondents owned a water tank
60 percent of respondents bought water in containers for drinking
98 percent of respondents boiled water every day
57 percent of respondents considered that their households were water-efficient
20 percent of respondents did <i>not</i> worry that one day the water source could run out

The following figures describe the water efficiency of the households. The first figure makes a distinction between households with and without access to the public distribution network (operated by PDAM). The second figure makes a distinction between households with and without a water tank.

Figure 5: Doing the dishes



Figure 6: Water efficiencies of households with and without access to public distribution network

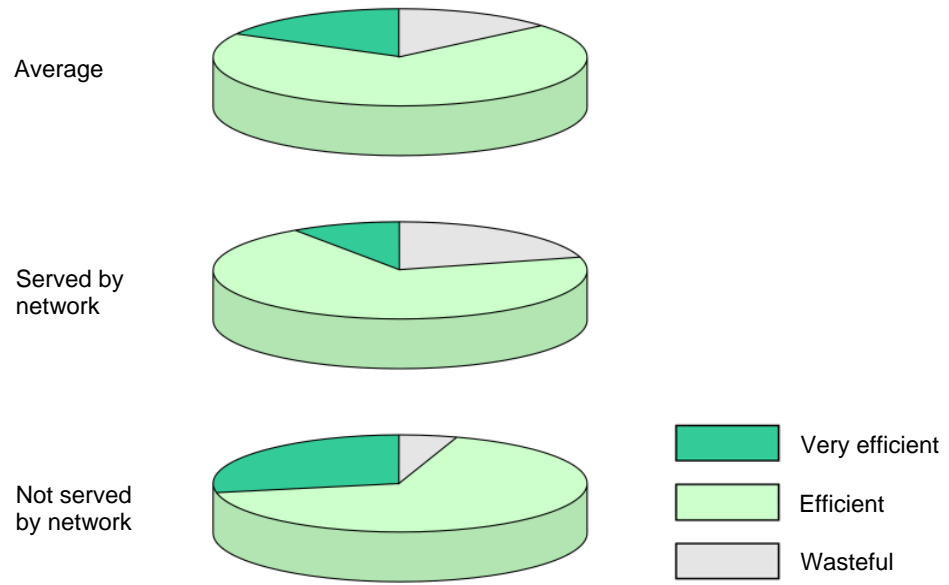
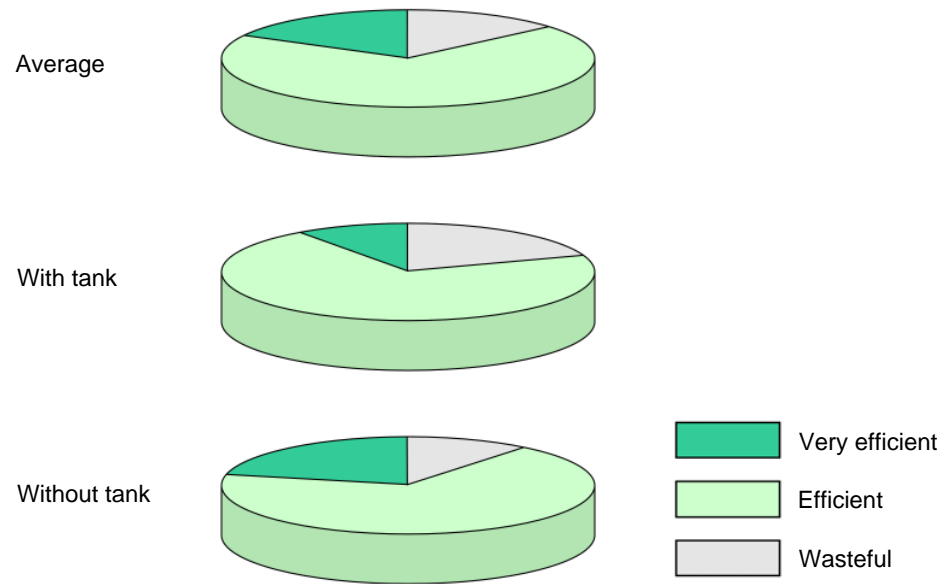


Figure 7: Water efficiencies of households with and without a water tank



4 Discussion

This study focused on user habits and attitudes rather than the actual water consumption per person. Hereby it is assumed that good habits will improve the efficiency irrespective of the volume of water consumed.

In general, the households had a good efficiency - with 86 percent classified as *'efficient'* or *'very efficient'*.

Households that were connected to the public distribution network had an efficiency that was somewhat below average. The same was the case for households that own a water tank. This confirms that better access to water - in itself a clearly positive development - also means higher consumption.

5 Conclusion

A good water efficiency of households can contribute to the conservation of a finite and precious resource to the benefit of future generations.

The water efficiency of households will improve when people are aware of why it is important to save water.

References

- ADB (May 08): Indonesia: Country environment analysis. Asian Development Bank
- Agam, Ramli (09): Menulis Karyes Ilmiah. Yogyakarta: Familia Pustaka Keluarga
- Agus S K and others (Jul 09): Policy on implementing integrated water resources management in Indonesia. Country paper prepared by Agus Suprpto Kusmulyono, Suharto Sarwan, Rahardjanto (DG WR), and Budhi Santoso, presented at the Conference on *'New Thinking on Water Governance'*, Singapore
- Budi Wignyosukarto (Jan 08): Pengelolaan Sumberdayes Air Terpadu Dalam Upayes Pencapaian Tujuan Pembangunan Milenium 2015. <http://budiws.wordpress.com>
- Masri Singarimbun, and Sofian Efendi (98): Metode Penelitian Survey. Jakarta : PT Pustaka LP3ES Indonesia

Websites

- <http://budiws.wordpress.com>
- <http://id.wikipedia.org/wiki/Air>
- http://id.wikipedia.org/wiki/Kota_Surakarta
- <http://jateng.bps.go.id/>
- <http://opac.geotek.lipi.go.id/>
- <http://pdamsolo.or.id/>

Appendix 1: Survey questionnaire

	Question	Used for efficiency rating
	Name, address, occupation	
1	Size of household	Yes
2	Do you use public water supply (PDAM) services?	
3	How many bathrooms do you have?	Yes
4	How big is your bathroom?	Yes
5	How many times per day do you fill the tub?	Yes
6	Do you use a water tank?	Yes
7	What is the volume of your water tank?	Yes
8	How many times a day do you fill your water tank?	Yes
9	How often do you clean plates and kitchenware?	Yes
10	Do you buy water in containers for drinking?	
11	How many times in a week do you refill your drinking water?	Yes
12	Do you boil water every day?	
13	How many times do you boil water?	Yes
14	What is the volume of your drinking water jar?	Yes
15	How many liters of water do you use to wash?	Yes
16	How would you characterize the water use of your household - wasteful or efficient?	
17	If your answer is <i>EFFICIENT</i> , what are the reasons?	
18	If your answer is <i>WASTEFUL</i> , what will you do to make it efficient?	
19	Do you ever think that some day there will be lack of water?	
20	What is the best you have done to save water?	

Center for River Basin Organizations and Management,
Solo, Central Java, Indonesia
www.crbom.org, info@crbom.org