



Independent Study of the USAID IUWASH Tangguh Activity – Methodology

Study Questions and Purpose

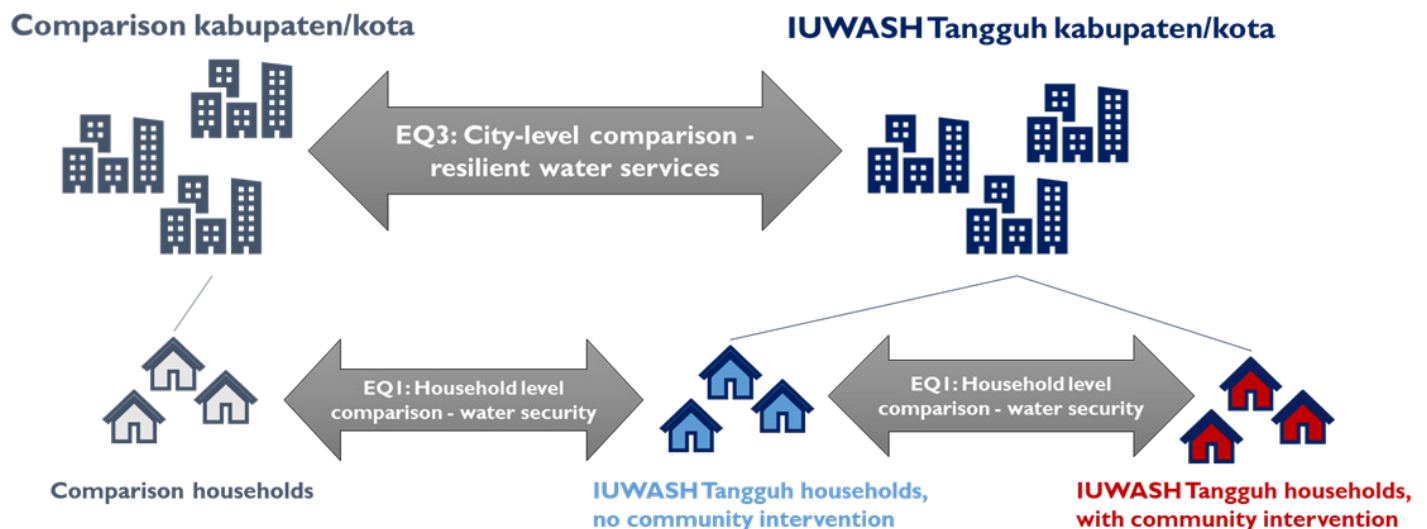
This independent study will capture information before and after three years of IUWASH Tangguh implementation to understand IUWASH Tangguh’s results, generate recommendations to maximize effectiveness, and assess the feasibility of increasing the activity’s scale. The study’s guiding questions are:

1. How has household water security in the targeted areas changed as a result of the interventions?
2. How have Perusahaan Daerah Air Minum (PDAMs) participating in IUWASH Tangguh and their local government counterparts changed WRM policies and practices in response to the Activity? What implications, if any, does this have for the quantity and quality (i.e., availability) of their bulk water supply?
3. How has city-wide water service resilience changed as a result of the interventions?

The study baseline focuses on questions 1 and 3, characterizing household water security and city-wide water service resilience in IUWASH Tangguh partner areas.

Study Design

The study will compare outcomes in IUWASH Tangguh’s partner kabupaten and kota to outcomes in similar comparison kabupaten and kota before and after the intervention. All kabupaten and kota in the study come from North Sumatra, Banten, West Java, Central Java, East Java, and South Sulawesi provinces. IUWASH Tangguh partner sites in Jakarta, Papua, East Nusa Tenggara, and West Kalimantan are excluded from the study because the study could not find similar comparison sites.



The study will compare resilient water service delivery between treatment and comparison kabupaten and kota. At the household level, it will compare household water security between three groups:

- Households in IUWASH Tangguh’s community intervention areas
- Households in IUWASH Tangguh partner sites that do not participate in community interventions
- Households in kabupaten and kota that do not participate in IUWASH Tangguh

Data Collection

The independent study team collected data through interviews with PDAM officials, Bappeda officials, and households during March and April 2023. Within each kabupaten and kota, the team conducted one interview with a PDAM official and one interview with a Bappeda official, as well as collecting documents¹ and secondary data on PDAM performance. The study team conducted in person interviews with households to gain information about their demographics, water sources, water collection, expenditure, storage, treatment, and experiences of household water insecurity. For a sub-set of households, the team sampled water that the respondent would normally drink (i.e., “point of consumption”) and, for households who drank water from non-bottled sources, the team also sampled water from the source (i.e., “point of collection”) to test for the presence of E.coli. Water quality testing was conducted during June and July 2023.

The total number of interviews and water quality samples collected for the baseline study is pictured below:

	Treatment		Comparison	Total
PDAM Interviews	31		31	62
Bappeda Interviews	31		31	62
	T, CI	T, Non-CI	Comparison	Total
Household Interviews	531	585	558	1,674
"Point of Consumption" E. coli Tests	295	325	310	930
"Point of Collection" E. coli Tests	287	309	300	896

Data Analysis

There are two primary analyses included in the study baseline:

1. **Balance analysis:** tests whether the treatment and comparison groups in the study are comparable on key outcome and explanatory variables
2. **Descriptive analysis:** describes the baseline status of outcomes of interest in IUWASH Tangguh’s partner sites with descriptive statistics

The study endline, to be completed in three years, will include an “impact analysis” that characterizes any changes caused by IUWASH Tangguh on outcomes of interest.

Findings from this baseline study are only applicable to areas of Indonesia that are similar to IUWASH Tangguh’s partner kabupaten and kota and community intervention neighborhoods. **Results should not be interpreted as representing all of Indonesia.**

Please reference the [study design report](#) for additional detailed information on the study methods.

¹ Document review covered: PDAM Business plans, PDAM Water Safety Plans (RPAMs) and local government Water Supply System Master Plans (RISPAMs)