Watershed degradation and water provision in Morogoro Municipality, Tanzania

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Introduction

- Adequately accessible and affordable water supply is vital for sustainable development and human welfare but is harnessed by watersheds' degradation.
- Morogoro Municipality depends mainly on Mindu Dam for water (domestic and industrial) supply.
- The sufficiency and adequacy are impacted by degradation and increasing population.
- The study was conducted in the municipality of Morogoro and it:
  1. Examined available sources of domestic water,
  2. Assessed its accessibility and actual household water consumption.

Study Area

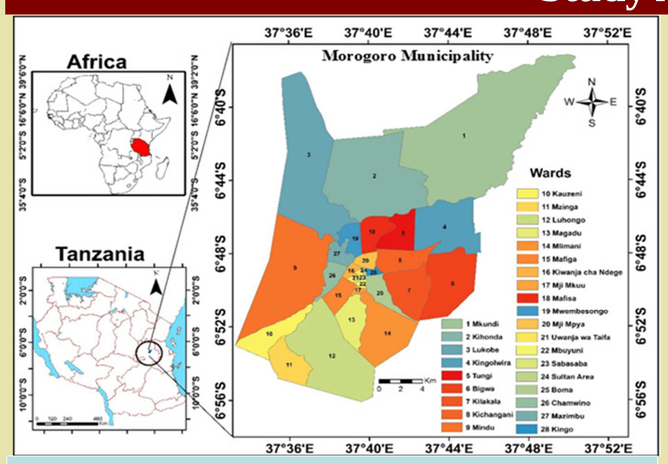

Figure 1: Location of Morogoro Municipality, Tanzania

- The study was conducted in Morogoro Municipality, Tanzania.
- It involved three randomly selected wards: Bigwa, Chamwino, and Mindu.
- 3-stage random sampling was used.
- Wards, Streets, and Households at stage 1,2, and 3 respectively.
- Sampling intensity was 10% at each stage.

Methodology: Data Collection and Analysis

- Data collection involved: Household questionnaire survey, key informants interview, observation, and literature search.
- Key informants' interviews were organized with MORUWASA officials.
- Field observation as a confirmatory supplementary method for available household water sources.
- Grey literature search enabled examining water supply records.
- Quantitative analytical techniques were used.
  - Descriptive statistics: frequencies, means, maximum and minimum values.
- Content analysis for qualitative (interview-collected) data.

Results and Findings

Table 1: Distribution of major water sources by selected wards in Morogoro Municipality

Means of accessing water	Ward (%)			% Total
	Bigwa	Chamwino	Mindu	
MORUWASA	1.1	19.4	0.0	20.4
Boreholes and wells	3.2	0.0	5.4	8.6
Rainwater harvesting	21.5	0.0	1.1	22.6
Other sources	0.0	0.0	48.4	48.4
Total				**100.0**

Figure 2: Some of the available means of domestic water

Results and Findings …

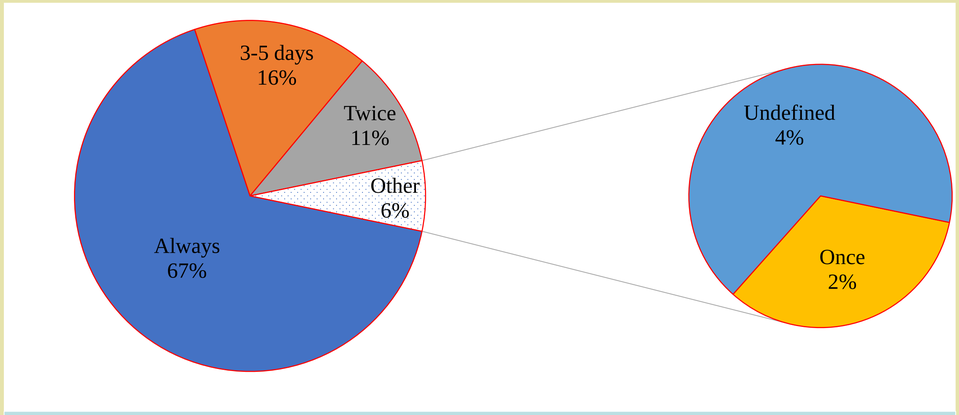

Figure 3: Responses by households on weekly water access

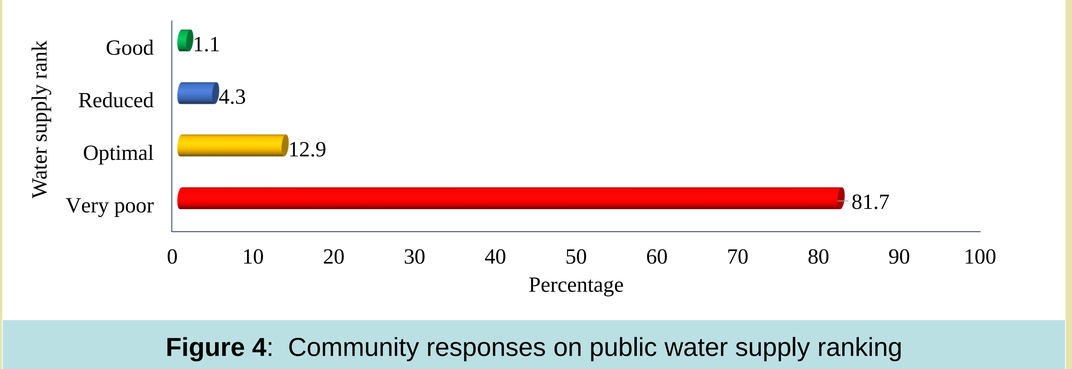

Figure 4: Community responses on public water supply ranking

Table 2: Household water consumption and spending

Parameter	Unit of measure	Statistic		
		Minimum	Maximum	Average
Household size	N	1	17	5
Daily water consumption	Litres (L)	30	1,400	144
Monthly water bill	TZS	0	70,000	15,976
Scarcity monetary cost	TZS	0	90,000	24,595

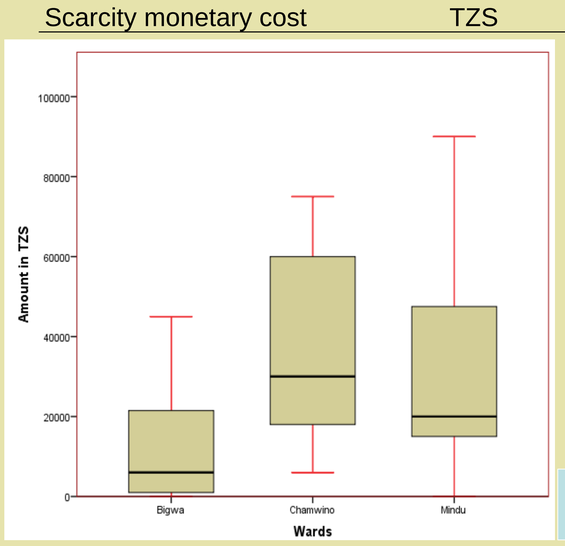

Table 3: Extent of water scarcity by respondents

Water scarcity effect	Percent
Affected by water scarcity	95.7
Not directly affected	4.3
Total	**100**

Figure 5: Distribution of monthly water scarcity costs by wards

Conclusion and Recommendation

- There is limited domestic water supply to peri-urban areas in the municipality.
- The inadequacy was attributable to low water supply coverage. Population increases while the main water sources remain the same.
- A substantial proportion of households especially in peri-urban areas depend on unimproved sources, consuming contaminated water.
- Interventions to improve water supply access should focus on conserving water sources to prevent further degradation and ensure natural water flow to keep in pace with the increasing population.
- Service extension to peri-urban areas should be of great consideration too.

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