



# Urban Rainwater Harvesting for Dakar's Urban Poor: Practices and Conservation Efforts

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## Abstract

Urban rainwater harvesting (RRH) has become a critical strategy for managing water scarcity in urban areas worldwide, including Dakar, Senegal, where it is particularly relevant to the urban poor. Data was collected through semi-structured interviews with 50 participants from selected neighborhoods in Dakar, employing thematic analysis to interpret responses. A notable finding is that approximately 70% of respondents reported using harvested rainwater for domestic purposes such as drinking and cooking. The most common method used was rooftop collection systems. The study concludes that RRH programmes are effective in providing sustainable water sources to urban poor families, though challenges remain regarding consistent use and community engagement. Recommendations include the need for ongoing education campaigns to ensure sustained usage of harvested rainwater by the urban poor. Additionally, policymakers should consider subsidies or incentives to promote the adoption of RRH technologies. Model estimation used  $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \sum_{i=1}^n (y_i - f(\theta; \xi))^2 + \lambda \operatorname{Vert} \theta \operatorname{Vert} \}^2$ , with performance evaluated using out-of-sample error.

**Keywords:** Sub-Saharan, African, Spatial, Hybrid, Systems, WaterHarmonization, Geospatial

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