

## **Sustainable Water Supply: Rainwater Harvesting as Flood Reduction Measures in Ibadan, Nigeria**

**Authors :** Omolara Lade, David Oloke

**Abstract :** Ibadan City suffers serious water supply problems; cases of dry taps are common in virtually every part of the City. The scarcity of piped water has made communities find alternative water sources; groundwater sources being a ready source. These wells are prone to pollution due to the close proximity of septic tanks to wells, disposal of solid or liquid wastes in pits, abandoned boreholes or even stream channels and landfills. Storms and floods in Ibadan have increased with consequent devastating effects claiming over 120 lives and displacing 600 people on August 2011 alone. In this study, an analysis of the water demand and sources of supply for the city was carried out through questionnaire survey and collection of data from City's main water supply - Water Corporation of Oyo State (WCOS), groundwater sources were explored and 30 years rainfall data were collected from Meteorological station in Ibadan. 1067 questionnaire were administered at household level with a response rate of 86.7 %. A descriptive analysis of the survey revealed that 77.1 % of the respondents did not receive water at all from WCOS while 83.8 % depend on groundwater sources. Analysis of data from WCOS revealed that main water supply is inadequate as < 10 % of the population water demand was met. Rainfall intensity is highest in June with a mean value of 188 mm, which can be harvested at community-based level and used to complement the population water demand. Rainwater harvesting if planned, and managed properly will become a valuable alternative source of managing urban flood and alleviating water scarcity in the city.

**Keywords :** Ibadan, rainwater harvesting, sustainable water, urban flooding

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