

Variability of water table in high density low income groundwater utilization area in Lagos, Nigeria

SHAKIRUDEEN ODUNUGA, LEKAN OYEBANDE & IFEYINWA OKEKE

Department of Geography, University of Lagos, Lagos, Nigeria

odushak@yahoo.co.uk; lekanoye@hotmail.com

Abstract This paper adopts a geo-statistical data analysis technique to model the spatio-temporal drawdown of groundwater in a high density low income area in Lagos. Weekly water level measurements for 12 wells were carried out for dry season periods between November 1995–April 1996 and November 2007–April 2008. The drawdown arising from climate variability/change and urbanization impacts between 1995 and 2008 was estimated using overlay analysis and mapped as digital terrain model (DTM). Average annual drawdown rate of 0.07 m per annum was estimated with a general drawdown of 0.8 m in the groundwater table of the dry season. This resulted in low production of water in most wells during the dry season periods. Annual maintenance of the wells during the dry season becomes imperative and this infringes on the economic wellbeing of the people. A complimentary extension of the surface water distribution network to the area is recommended.

Key words water table; low income; Lagos, Nigeria