

GROUNDWATER STORAGE POTENTIAL IN DINABANDHU

ANDREWS COLLEGE, GARIA, KOLKATA

SOMNATH MUKHOPADHYAY¹ & SUBHANIL GUHA²

¹Department of Zoology, Dinabandhu Andrews College, Kolkata India

²Department of Geography, Dinabandhu Andrews College, Kolkata India

ABSTRACT

Groundwater storage becomes an important phenomenon in the current century throughout the entire globe. Basically, groundwater is the water stored deep beneath the earth's surface in underground aquifers and it is less vulnerable to pollution than surface water. Thus, it is an essential source for drinking water. But today, severe decline in water table due to anthropogenic activities becomes a critical problem particularly in the metropolitan cities with high population density. This water storage capacity primarily depends on the balance between precipitation and evapotranspiration (ET). Various meteorological parameters like temperature, wind speed, humidity, solar radiation etc. have considerable impact on the groundwater storage. It is extremely necessary to understand the ET of the region before town and country planning. Rainwater harvesting is a common practice for groundwater recharge. In urban areas, water bodies like ponds and lakes may play a crucial role for groundwater storage. The present study focused on the role played by a pond as natural water harvesting system in an academic institution in Kolkata. FAO56 Penman-Monteith method has been extensively used for estimating reference evapotranspiration for the study area from 2011 to 2016. The results indicate higher ET_0 during the summer season while higher water storage in the monsoon season. The months from June to September have considerably high water storage. 47.16 % of the total annual rainfall has been stored in the pond for the last five years continuously. It reflects a great potential of groundwater storage using natural rainwater harvesting system in the adjacent locality.

KEYWORDS: FAO56 Penman-Monteith Method, Groundwater Storage, Meteorological Parameters, Rainwater Harvesting, Reference Evapotranspiration