

AN ASSESSMENT OF THE HYDROCLIMATE AND WATER RESOURCES OF SOUTHWESTERN NIGERIA

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ABSTRACT

The quantification of water balance or water budget is essential in hydrological studies for assessment and management of water resources. The information derivable from water balance studies includes the amounts and periods of water surplus and deficit; and also, the amount of moisture lost through evapotranspiration or runoff and the amount stored as soil moisture. A water surplus exists when there is more rain than needed to satisfy potential evapotranspiration. Soil moisture is utilized when rainfall is less than evapotranspiration. If the period of soil moisture utilization continues, the soil moisture will be exhausted. During periods of water deficiency, plant growth is limited by a shortage of water. Soil moisture recharge occurs when precipitation exceeds evapotranspiration and the soil moisture content is below field capacity. From the water balance, the seasonal pattern of rainfall, evapotranspiration and runoff clearly indicates the time of moisture deficit, soil moisture recharge and moisture surplus. The period of soil moisture utilization starts in November when rainfall becomes less than evapotranspiration in all the basins.

Keywords: Hydroclimate, water resources, Southwestern Nigeria.