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AN ASSESSMENT OF SPATIAL COVERAGE OF RAINFALL DATA IN KATSINA STATE

SU USMAN, AI ABDULHAMID, BA SAWA, YUSUF Y. O & A. K. USMAN

Department of Geography, Ahmadu Bello University, Zaria, Kaduna, Nigeria

ABSTRACT

Rain gauge density differs from one region or country to another due to physical, economic or political factors. Right rain gauge density is an the important prerequisite for obtaining rainfall data that give a true picture of rainfall condition in an area, which is indispensable in agricultural planning and water resource management. This study investigates spatial coverage of rainfall data in Katsina state by determining the optimum number of rain gauge stations needed for the state. The study involves rainfall data from five selected stations across the state. Choice of the stations is based on their spatial distribution and availability of continuous data for at least the last thirty years. Optimum number of stations required for the state was determined based on the coefficient of rainfall variability of the state. Results reveal that 21 stations as evenly distributed as possible are required for proper spatial rainfall pattern of the state to be obtained. Knowledge of the right rain gauge density for states holds a lesson for agricultural planning and development and water resource management.

KEYWORDS: Coefficient of Variability, Rain Gauge Density, Rainfall Pattern, Synoptic Station