

◆ Research paper

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Utilization Analysis of Water Demand and Supply in Akwanga Local Government Area of Nasarawa State, Nigeria

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Abstract: Water is one of the most important renewable natural resources, as no one can survive without it; whether plants or animals. Water is one of the basic human needs that is imperative for sustaining the quality of life on earth. However, its unequal spatial distribution and mismanagement make it scarce. This study, therefore, analyzes the utilization demand and supply of domestic water in Akwanga Local Government Area of Nasarawa State, Nigeria. To achieve the above, the coordinates of the water sources were collected from the field, and a point map was created to show the spatial distribution using the Geoinformatics (GIS) technique. A purposive sampling technique was used in selecting study household respondents to administer a questionnaire and interview. The sample questionnaire and conducted interview were used to elicit and examine requisite information on the demand, supply, and socio-economic utilization of water in the study area. In specific terms, the Random sampling technique was used to administer 399 respondents while only three hundred and thirty-two 332 (83.2%) were returned fully completed. The SPSS software was used for questionnaire data analysis. Analytic techniques involve descriptive statistics such as frequency distribution, and simple percentages. Inferential Regression analysis and correlation were used to combine the variables accounting for water demand, supply, and shortage. The study reveals that women and children are mainly in search of water. Variable indicators examined include the physical environment, household

size, distance to a water source, amount of water demand, supply infrastructure; socio-economic implication of water. The result of the correlation coefficient shows there exists a very high positive linear relationship between the water demand and water supply. The study recommends that the process of water supply development should be stepwise by the participatory and managerial capacity of communities. This is in addition to the expansion of pipe-borne water network coverage to every household.

Keywords: Akwanga LGA, water, demand and supply, GIS, statistics



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