

AN EVALUATION OF MUNICIPAL WATER SUPPLY IN BOSSO, NIGER STATE USING GEOSPATIAL TECHNIQUES IBB University Lapai.

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Abstract

The purpose of municipal water delivery system is to transport portable water from a source to water treatment facility to residential consumers, for different uses. In most parts of Nigeria as in Niger state achieving this portable water delivery has been an issue of concern. This problem is in terms of quality and quantity of water which could be affected by the geological and geographical elements of an area. This research was set to evaluate municipal water supply in Bosso using geospatial techniques in order to identify the various sources of water for human consumption., evaluate the components of the existing system in use and to examine the problems associated with the available system. Questionnaires were administered, interviews, field observations, remotes sensing images as well as GIS analysis were carried out. The various sources of water were identified, to ascertain the extent of portable water supplied in Bosso, a part of Minna municipal area. The source point of the dissipated water was first identified then evaluated to ascertain its reliability by calculating the area covered. Similarly, the distribution was examined with respect to the terrain elevation. Various problems were identified and possible solutions were recommended. The analysis showed that a low percentage of the population receives portable water and the frequency of the water supply is low. The existing system supplies water from Bosso dam which is undergoing sedimentation, thereby reducing the capacity. For a more efficient supply Tagwai dam also supplies Bosso. The digital elevation model shows that the terrain of the area is undulating and is partially responsible for the poor distribution of pipes. Routine monitoring of the dam as well as dredging was recommended, expansion of the existing system as well as designing of a better GIS system for the area among others was recommended.

Key words: Municipal water supply, Water Quality, Water Quantity