

**Study of Wetlands, Shallow Groundwater and Crop Production in the White Volta
Basin in the Kassena District in the Upper East Region**

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ABSTRACT

Study of wetlands, shallow ground water and crops production in the White Volta catchment of the Kassena Nankana district in the Upper East Region of Ghana was carried out through acquisition of landsat TM 2007 satellite imagery, observations, interview, surveys, discussion and GIS tools usage. Riverine, man-made and depression wetlands were the only wetlands found in the area. In addition, most of the shallow groundwater hand-dug-out wells were found on the riverine wetlands area where they were recharged. Other uses of the wetlands include domestic, irrigational purposes, livestock watering and for fishery resources. The ownership of depression wetlands was communal with isolated cases of individual caretakers while the riverine and man-made were outright in the hands of individuals who farm on them. The delineated wetlands were superimposed on land use and cover map of the study area and the possible impacts on wetlands deduced using the Anderson II land use, land cover classes (LULC). The reasons for low vegetation cover (trees and shrubs) in the study area were identified as: outmoded farming practices, bushfires, cultural beliefs, sand winning, charcoal burning, fuel wood collection and infrastructural development. Consequently, the lands were denuded denying the soil of organic matter with resultant hastening of soil erosion, creating gullies with attendant siltation and sedimentation of depression wetlands. The cumulative effect had been reducing in the role attributed to depression wetlands which was surface runoff storage and provision of sediment export or provision of critical wildlife travel corridors in the case of riverine wetlands. In order to conserve and utilize the wetlands, the chiefs and community elders settle dispute emanating from the use of depression wetlands for irrigation. Diversified livelihood strategies were chicken/ guinea fowl, sheep and goat rearing and tomatoes production.

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