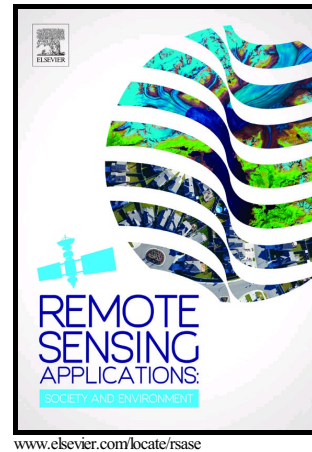


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in the White Volta Sub-basin of Ghana

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## Mapping the spatial distribution of small reservoirs in the White Volta Sub-basin of Ghana

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### Abstract

Small reservoirs provide vital ecosystem services in the semi-arid part of Ghana. Their main role is the provisioning of water for irrigation in this water-scare part of the country. They also serve as source of water for fishing, recreation, drinking, and other domestic uses and play crucial roles in evaporation, water productivity, water scarcity mitigation and climate modulation in this area. As such, their accessibility by the populace is vital to their well-being. Also, their locations, surface area and capacity (volume) are required for water resources assessments and hydrological modelling. This work was done to map the distribution of the small reservoirs in the White Volta sub-basin in Ghana. The work assessed the accessibility of artificially built small reservoirs in the relevant communities using satellite images and ground information. The study used six Landsat 8 Operational Land Imager images covering the study area. Histogram thresholding technique was used to delineate the waterbodies from their adjacent uplands. Accuracy assessments were done through field observed data and Google Earth images. The method used produced a positional accuracy of 94%. The study estimated that there are approximately 254 small reservoirs of

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