Quantitative and qualitative analysis of groundwater resources in Katiola area

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The increasing pressure from development of cultivated areas and demographic increase on water resources have spawned in Katiola area water stress. This study aims to make quantitative and qualitative analysis of Katiola area water resources. We used descriptive statistical analysis, multivariate and spatial analysis on 83 boreholes spread throughout the area. In quantitative terms, 63% of borehole flows are low and indicated to HV supply (hydraulic village), about 37% of boreholes are ranging between medium and high flow class and indicated to HVA supply (improved hydraulic village). The most productive water arrivals (AE) are located in the first 35 m depth under the alteritic layers. Schist aquifers are more productive than granite aquifers and give real hydrogeological potentialities to search for best flow. In qualitative terms, the groundwaters of Katiola area are less mineralized. The mineralization of waters is influenced by the petrographic type of rocks, especially by the contribution of hydrogen carbonates (HCO_3^-) and calcium (Ca^{2+}) in water. Therefore, 62% of water points have high iron concentrations. High iron levels are related to the geology of the study area, specifically by the contribution of biotite and Birimian schist mineral characteristics of the host rocks.

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