ABSTRACT

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This study deals with issues related to water resources and the accessibility to water in Bugesera district, a rural area of Rwanda. The research problem focuses on why people in Bugesera face perpetual problems related to water shortage. The research focuses on physical and socio-economic factors affecting people's access to water. The main idea behind this study is the dissection of the relationship between people's access to water for different needs and the availability of water resources. In order to understand the underlying causes of water shortage in Bugesera, the overall aim is to investigate and document the main factors affecting the accessibility to water according to different household needs in the study area.

The research has been undertaken within a context of sustainability, focusing on the relationships between the population, their activities and the environment. Therefore, the research framework considers debates putting water resources and the access to water into a sustainability context.

In order to address the research aim, both quantitative and qualitative approaches have been used. The quantitative approach is used to map water availability while the qualitative approach is used to get qualitative information on how the available water is accessible to people in the area. Quantitative data used are satellite images, as well as other secondary sources, including spatial and statistical data collected from different institutions, and reports. Qualitative data is mainly information from semi-structured interviews conducted in the field. Data analysis was achieved through the modelling with the Geographic Information Systems (GIS) and remote sensing, as well as the interpretation of interviews.

An important finding is that the majority of people live far away from local water resources, which constitute the main source of water in Bugesera. In addition to the limited number and the location of available local water resources, most of these resources are being depleted due to inappropriate land use. However, the major part of the district has potential areas of groundwater, which are not exploited due to the lack of financial means. Due to poor maintenance, the majority of the available piped water systems failed. In areas where piped water systems work properly, the majority of the people cannot afford the price from these systems. Despite sufficient rainfall in the area, very few households have the facilities to collect rainwater. As irrigation is not developed sufficiently, agriculture relies on rain, except for households that access wetlands. This is a key factor behind the problem of food insecurity in most households. Apart from the problems related to the poverty of people and the availability of water resources, the local people are not involved enough in water resources management. All these factors contribute to the persistence of problems related to the access to water in Bugesera.

Keywords: Water resources, access to water, GIS, remote sensing, Bugesera, Rwanda

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Department of Human and Economic Geography
P.O. Box 630
405 30 Göteborg, Sweden