

## Geographic Information System as a tool of environmental management solution in Rwanda

Nyesheja Muhire Enan<sup>1,2,3</sup>, Chen Xi<sup>1,2</sup>

1. State Key Laboratory of Desert and Oasis Ecology, Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, 818 South Beijing Road, Urumqi, Xinjiang 830011, China;
2. University of Chinese Academy of Sciences (UCAS), Beijing 100049, China
3. Independent Institute of Lay Adventists of Kigali (INILAK), P O Box 6392 Kigali-Rwanda

Email:[nyenani@gmail.com](mailto:nyenani@gmail.com)

### Abstract

The Geographic Information System is a tool for better solution of environmental management in Rwanda. Rwanda's environmental resources can be categorized into land, wetlands, forests, and water resources. This paper aimed to conceptualize the integration and application of GIS and Remotes sensing in environmental context through a review of the existing literature. This paper will help to identify the areas in which their integration and application has proved the most valuable in Rwanda environment, and reveal the extent to which their potential has been realized. It willalso help to identify the Rwanda environmental aspects, including the challenges to be overcome to find solutions.

According to EDPRS 2, the major problem in the field of environmental protection in Rwanda is the imbalance between the population and the natural resources (land, water, flora and fauna and nonrenewable resources, which have been degrading for decades). This degradation is observed through massive deforestation, the depletion of bio-diversity, erosion and landslides, pollution of waterways and the degradation of fragile ecosystems, such as swamps and wetlands. Geographical information system is important tool to achieve goals of sustainability science which include understanding, integrating, and modeling nature and society for well being of each nation citizens.

**Key words:** Environment, Geographic Information System, Remote Sensing, Global Positioning System