UNIVERSITY of RWANDA

COLLEGE OF SCIENCE AND TECHNOLOGY

Centre for Geographic Information Systems and Remote Sensing (CGIS)

CALL FOR MANUSCRIPTS

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Special Issue Title: Geo-spatial Technologies for Effective and Efficient Resources Management and Services Delivery

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Special Issue Information:

The continuous development of Geo-Information Technologies (GEO-ICT) has widened the room for its use by various actors in the areas of socio and economic development, including the monitoring of natural resources management in a rapidly changing environment in both urban and rural areas. Globally, the planet has been facing the increasing resource scarcity and depletion resulting from their high demand and use, which are coupled with the unprecedented population growth. The latter has flourished the appalling effects of climate change. Resource scarcity and related increasing demand sometimes result in material inequalities that perpetrate the breakdowns in social cohesion and sustainable development. For instance, the rapid population growth, the uncontrolled urbanization and climate effects have critically influenced the availability and accessibility of basic infrastructure and services, affordable houses and the shortage of productive land accelerating the momentum for food insecurity. In view of the above-mentioned challenges, the use of GEO-ICT is still expected to support the well-sounding planning and decision making in relation to the use and allocation of resources to different users, their protection or preservation and delivery of various services needed for the human welfare in both rural and urban areas. Meeting those aspirations also requires good land administration and management for addressing the issues

relating to land tenure, value, use and development which constitute the building block for the socio-economic transformation of all countries across the world.

This special issue welcomes manuscripts discussing scientific and technical approaches that offer new insights into how the Geo-ICT has been contributing to solving pressing global challenges, with respect to spatial development, natural resources and environment management and related services delivery. As the whole world has been facing various challenges driven by the Covid-19 pandemic, scientists have been expected to probe a wide range of solutions against those challenges or provide a wide understanding of this pandemic in order to develop scientific options which are meant to ensure the appropriate management of the related impacts. In this respect, this special issue also expects the manuscripts that uncover the state-of-the-art techniques and applications that address the issues relating to Covid-19 pandemic. Generally, it is calling for manuscripts discussing various topics that pertain to the following thematic areas:

- **Geo-information Systems in Agriculture Industry (Precision and Smart Agriculture Development, Food-chain and food Security):** E.g. Crop production and prediction; Crop health monitoring and impact of natural disasters on crop production for operational approaches; Assessment and monitoring of soil properties for agricultural production enhancement; Agricultural land suitability and resource allocation; Connectivity among farming sites, financial institutions and markets; Modelling accessibility to food (markets and consumers); GIS based food emergency responses; etc.
- **Geo-ICT for improved Land Administration and Management Systems:** E.g. E-land registration and cadastral services automation; Low-cost and/or pro-poor cadastral survey; Innovative tools and procedures for managing (including the updating) land information; Geo-ICT in land valuation and taxation; Inter-agencies connectivity and use of land information in service delivery; Modelling land fragmentation and consolidation scenarios; Blockchain for land administration; Geo-ICT for land governance; Land Administration for 3D land development; etc.
- **Environment, Climate Change, Disaster and Natural Resources Management:** E.g. Pinpointing and managing the environmental impacts resulting from human activities; Smart solutions for land use degradation; Biodiversity modelling and monitoring; Wetland management and monitoring; Watershed management; Prediction of climate change induced impacts and early-warning systems; Geo-information in flooding and erosion modelling, and drought control; Disaster risk reduction and management in urban spaces; etc.
- **Sustainable and Integrated Urban and Rural Development:** E.g. Smart land use planning; decision support tools for spatial planning; Web-based decision support for urban planning and growth monitoring; Modeling urban and rural linkages; GIS-based multi-Criteria analysis for rural settlements site selection; geo-information for managing the competing land use interests; Spatial development and resources degradation risks assessment; Integrated urban and rural planning and land resource allocation; Smart solutions and inclusive management of informal settlements or

slums; Green cities development: connecting the urbanization, environmental assets and ecosystem Services; Geo-ICT in monitoring and mitigating socio-spatial inequalities; Geo-ICT for physical and socio-economic dynamics in urban spaces; 3D city modelling; Spatial modelling of basic infrastructure and services accessibility and travel behaviour; Geo-Information in electrification and development of renewable energy solutions; big data analytics and machine learning for spatio-temporal urban growth analysis; etc.

- **Geo-Information in Economic Growth and Globalization:** E.g. National borders demarcation and physical changes tracking; Socio-political conflicts and risks for resources degradation monitoring; Geographical perspectives of economic cooperation and natural resources management (at regional and continental levels); Geo-targeting and global supply chains for goods and services; etc.
- **Geo-ICT in public health, environmental health and Covid-19 Pandemic Management:** E.g. Support to the global fight against Covid-19 outbreaks; Spatial analysis of Covid-19 risk trends (who is affected, when, where) and assessment of driving factors; Covid-19 related risk perceptions and hygiene behaviour across space and time; Modelling the Covid-19 pandemic impacts and post crisis development strategies (including settlement improvement through suitability analysis for basic infrastructure and emergency support services provision); Globalization, partnership and responses to Covid-19 pandemic; etc.

Instructions for Authors:

Original full papers are welcome for this special issue. The manuscript should be written in a concise form, in 1.5 spaced format, with a font size of 12 pt., in Times New Roman font style, and the length should not exceed **10,000 words** (references included). Title should not exceed 15 words and keywords should be 5 maximum. The recommended reference style is APA 6th Edition (accessible from https://apastyle.apa.org/6th-edition-resources/). For more, the authors should consult the RJESTE author guidelines available at https://www.ajol.info/index.php/rjeste/about/submissions.

Manuscripts should be submitted to Dr. Ernest Uwayezu (wayezuernest@gmail.com or e.uwayezu@ur.ac.rw) with a copy to the Editor in Chief (ebizuru@gmail.com) and the co-editor (grwanyiziri@gmail.com).