

Effects of Urban Sprawl on Service Provision and Transport Accessibility in Peri - Urban Areas : the Case of Rwanda

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Received 19 July 2022; revised 31 July 2022; accepted 3 August 2022

Abstract

One of the most disturbing outcomes of rapid urbanization in least industrialized countries is the inability to manage land development in rapidly growing cities. Many of the present large cities in Africa for example, have sprawled beyond the limits of the city authorities to provide the basic infrastructure services such as piped water, electricity, sewerage and roads to a point where their efficacy is greatly reduced, but it also adds considerably to the costs of such services as education, health and transport. This study was therefore geared towards exploring the effects of urban sprawl on service provision and transport accessibility in peri-urban areas in developing countries. Through the case of Rwanda both Primary and Secondary data were used to stipulate current situation of urban sprawl in Rwanda without undermining environment and other factors included in sustainability elements. Literature review was done covering urban planning related documents, policies and legislations. Interviews with 90 residents in the city of Kigali were also conducted and these were selected randomly. Additionally, One (1) professional expert from the city of Kigali was interviewed to get his understanding while respecting ethical issue. The study has revealed that urban sprawl in the city of Kigali is controlled through building permits. The land developers in case they want to initiate their projects they need to seek for building permit which will allow them to execute projects. The land developers are monitored by the District officials to see whether what was approved on the plan comply with what is happening on the ground. In peri - urban areas important services are provided, a situation which makes community attracted in this area for development projects. This study highly recommend on consideration of smart city concept as cities are spatially expanding and due to the fact that this idea coming soon into action. Finally, the study recommends that public services provision including transport facilities be proved before settlement is developed.

Keywords: Level, Trend, Urban Sprawl, Developing World, Rwanda.

1.0 INTRODUCTION AND LITERATURE REVIEW

Urban sprawl is a difficult, poorly defined truth. It is an encroachments of City or town into forest cover, agriculture and others usually to create built up areas made by low income earners houses, as well as advanced adjustment of various elements like roads, houses and storerooms (Mancebo, 2009). With rapid urbanization and more than half of World's people live in cities and most of them face numerous challenges including environmental and socio-economic transformation (Wolff, Mdemu, & Lakes, 2021).

By 2030 city dwellers globally are expected to increase by 1.4 billion people, with city and towns population for 60% of globe's community. Thus by 2050 this numbers is anticipated to extent at 2.6 billion (Jones, Cummings, & Nixon, 2014). While the speed and pattern of urban development urbanization

- Tasamba, J. (2021, 06 11). Rwanda launches electric motorcycle project. Retrieved April 13, 2022, from Africa: <https://www.aa.com.tr/en/africa/rwanda-launches-electric-motorcycle-project/2270425>
- Torquati, B., Giacchè, G., & Tempesta, T. (2020, October 17). Landscapes and Services in Peri-Urban Areas and Choice of Housing Location: An Application of Discrete Choice Experiments. *Land* . doi:10.3390/land9100393
- Torres, H. d. (2011). Environmental Implications of Peri-Urban Sprawl and the Urbanization of Secondary Cities in LAatin America . Environmental Safeguard Unit . Inter-American Development Bank (IDB). Retrieved March 2011, from <http://www.iadb.org>
- Ustaoglu, E., Williams, B., & Petrov, L. O. (2017, April 5). Scenario Analysis of Alternative Land Development Patterns for the Leipzig-Halle Region: Implications for Transport-Land-Use Sustainability. *COGITATIO*, 2(1), 108–129. doi:10.17645/up.v2i1.838
- Uwiringira, M. J. (2014, 07 28). Ruyenzi: Barasabwa kwibumbira mu matsinda abafasha gukemura ibibazo by'umutekano. Retrieved April 13, 2022, from KIGALITODAY: <https://www.kigalitoday.com/umutekano/imbere-mu-gihugu/article/ruyenzi-barasabwa-kwibumbira-mu-matsinda-abafasha-gukemura-ibibazo-by-umutekano>
- Wolff, S., Mdemu, M. V., & Lakes, T. (2021, February 9). Defining the Peri-Urban: A Multidimensional Characterization of Spatio-Temporal Land Use along an Urban–Rural Gradient in Dar es Salaam, Tanzania. *Land*. doi:10.3390/land10020177
- World Bank Group, W. B. (2017). RESHAPING URBANIZATION IN RWANDA Economic and Spatial Trends and Proposals. Secondary cities. Retrieved December 2017, from <http://www.copyright.com/>.
- Yiran, G. A., Ablo, A. D., Asem, F. E., & Owusu, G. (2020). Urban Sprawl in sub-Saharan Africa: A review of the literature in selected countries. *Journal of Geography*, 12(1), 1-28. Retrieved 2020, from <https://doi.org/10.4314/gjg.v12i1.1>