

Influence Of City Development On Green Cover In Uganda, Acase Study Of Jinja Town Council-Jinja District

Babirye mercy¹, Mirembe Susan²

1, 2 Metropolitan International University

Abstract.

This study investigated the historical impact of urbanization on forest cover in Uganda, focusing on the case study of Jinja Town Council in the Jinja District. Against the backdrop of global urbanization trends, the research delves into the profound changes in population distribution from predominantly rural to increasingly urban. Uganda, despite being one of the least urbanized countries globally, faces challenges as urbanization intensifies. Historically, forests have played a crucial role in Ugandan livelihoods, providing resources for homes, food, traditional medicine, and religious beliefs. The study identified a critical issue in Jinja, where forest cover has decreased by 50% over the decade from 2010 to 2020. The urbanization process, marked by factors such as population growth, political interference, and complex land ownership issues, contributes significantly to the degradation of forest lands. Encroachments for residential purposes have resulted in a substantial reduction in the forest area, impacting weather patterns and exacerbating climate condition. To address the gap in existing research, the study formulated specific objectives, including examining the causes of urban expansion, assessing the impact of urbanization on forest resources, and identifying challenges for sustainable forest management. Methodologically, a mixed-methods approach, combining qualitative and quantitative analyses, was employed. Findings highlight key causes of urban expansion, challenges to sustainable forest management, and factors contributing to the decrease in forest coverage. Notably, the study emphasizes the urgent need for comprehensive policies addressing urbanization's impact on forest resources in Jinja Town Council. In conclusion, the research underscored the urgency of mitigating the adverse effects of urbanization on forest cover in Uganda. The recommendations included implementing family planning measures, raising awareness about sustainable energy alternatives, and fostering collaboration between relevant authorities to promote responsible forest management practices.

Key words: Urbanization and forest cover.

Background of the study

Globally, more people live in urban areas than in rural areas. In 2010, for the first time in history, the global urban population exceeded the global rural population, and the world population has remained predominantly urban (Peter & Nicholas, 2023). The planet has gone through a process of rapid urbanization over the past six decades. In 1950, more than two thirds (70 percent) of people worldwide lived in rural areas and less than one-third (30

percent) in urban areas. In 2014, 54 percent of the world's population was urbanized (Salahub et al., 2018). The urban population is expected to continue to grow, so that by 2050, the world will be one third rural (34 per cent) and two-thirds urban (66 percent), roughly the reverse of the global rural-urban population distribution of the mid-twentieth century. Urbanization refers to a growth in the proportion of a population living in urban

Received: 16.12.2023

Accepted: 21.12.2023

Published on: 30.12.2023

Corresponding: Author: research.miu.ac.ug/publications 452

areas and the further physical expansion of already existing urban centers. As Jember and Mekonen, (2007), stated that, urbanization is the process through which society is transformed from being predominantly rural, in economy, culture and life style, to being predominantly urban (Jackline et al., 2023). It is the process by which large number of people becomes permanently concentrated in relatively small areas, forming cities and towns. Uganda is one of the least urbanized countries in the world. Based on the 2007 PHC report it has only 16% of its population living in urban centers. Historically, forests have been very important for the livelihoods of the people of Uganda (Esther et al., n.d.). The Ugandan people used trees to build their traditional homes and to cook their food. They also made traditional medicines from trees and other forest plants. Forests were also important in Ugandan religious beliefs; the people believed in holy spirits in the forest that they treat in the same way as human beings. According to data gathered from woreda

agricultural and rural development office, in the study area, the removal of forest by cutting are one of the most long standing and significant ways in which inhabitants have an impact on the environment (Irumba et al., 2023). Forests are cleared by the society for various purposes. Among them, the major is to provide fuel for domestic purpose, to provide wood for construction purpose and the need for cultivable land. Forests are cleared by the society for various purposes (Denis & Sophie, 2023). Among them, the major is to provide fuel for domestic purpose, to provide wood for construction purpose and the need for cultivable land. Urbanization also plays an important role in forest resource destruction through consumption of the forest product (Niyonzima, 2023a). Forests provide a wide variety of ecological, economic and social services, including the conservation of biological diversity, carbon storage, soil and water conservation.

Statement of the problem

Forest cover in Jinja has decreased by 50%, in the ten years between 2010 and 2020. According to, management is challenged by rapid implications of urbanization such as population explosion, political interference, and complex land ownership issues, among others (Niyonzima, 2023b). Currently, Jinja forest land is heavily encroached upon for residential (Benard & Moses, 2023). It has been surrounded by buildings and businesses, and as a result the forest area has shrunk a great deal. This is particularly problematic because the weather patterns have become more severe by causing long periods of drought conditions and hence interfering with the climate of the region and the country as well (Elifaazi et al., n.d.).

Received: 16.12.2023

Accepted: 21.12.2023

Published on: 30.12.2023

Various researchers have come up with studies on the causes of forest degradation and the control measures but ignoring the impact of urbanization in particular as one of the major causes of forest cover destruction (Esther et al., n.d.). This thus makes it urgent for the researcher to conduct the current study to examine the impact of urbanization on forest cover in Jinja town council.

Major Objective of the study

The general objective of this research was to assess the impact of urbanization on forest cover in Jinja town council.

Specific objectives

1. To examine the cause of urban expansion
2. To examine the impact of urbanization on forest resources
3. To identify the challenges for sustainable management of forest resources

Research Questions

Based on the objectives the hypothetical questions would revolve around the following speculative directions: -

1. What are the causes of urban expansion?
2. How does urbanization affect forest resources?
3. What are the challenges for sustainable management of forest resources?

Methodology.

This research employed a qualitative and quantitative survey and analysis. In qualitative research, different knowledge claims, enquiry strategies, and data collection methods and analysis are employed (Creswell, 2003). The researcher used descriptive and inferential data analysis techniques. The qualitative data sources of the study shall include participant observation (fieldwork), interviews and questionnaires, documents and texts, and satellite image. Quantitative research makes use of questionnaires and surveys to gather data that has been revised and tabulated in numbers, which allows the data to be characterized by the use of statistical analysis. In order to assess the impacts of urban expansion on forest resources of Jinja town council, the researcher collected information from both

Received: 16.12.2023

Accepted: 21.12.2023

Published on: 30.12.2023

Corresponding: Author: research.miu.ac.ug/publications 454

primary and secondary data sources. Primarily data shall be collected through the combination of structured interviews, personal observation and questionnaires from randomly selected respondents, local leaders, District administrators, experts and other key informants. Secondary data was collected from Journals, Regional and Local government reports and publication, books, articles, and reports of related institutions. The sample was drawn from residents operating and living in and around Jinja town council. Other persons to be interviewed are Jinja district local government officials from the natural resources department. Simple Random sampling methods was used to ensure each member of the target population have an equal and independent chance of being included in the sample. The study targeted 50 respondents of which were community members from Jinja town council, 7 were local leaders from the district and from the town council while the rest (3) were officials from the ministry of environment. Primarily data collected from sampled households was processed and analyzed by using the Statistical Package for Social Scientists (SPSS). Prior to analysis, completed questionnaires were coded, and organized. After the completion of coding, all valid questionnaires were captured in a coherent format of SPSS database. Finally, survey data analyzed be interpreted by using descriptive statistics such as frequency distribution, central tendency, graphs and cross-tabulation and also inferential statistics especially correlation.

Results.

Table 1: Shows causes of urban expansion in Jinja town council

No	Causes/factors of urban expansion	Yes, in %	No, in %
2.1	High-rate natural increase of population	84.4	13.5
2.2	Rural to urban migration	86.5	11.5
2.3	Industrialization	-	97.9
2.4	Presence of chartered municipality	56.3	41.7
2.5	Expansion of modern means of transportation and communication	57.3	40.6

Source: Compiled from household survey, 2022

Table 1 revealed that 84.4 percent of the respondents have the opinion that the causes of urban expansion in the study area was due to high rate of birth and remaining 13.3 percent gives the growth of population to other factors. On the other hand, 86.5 percent replied that the cause was rural to urban migration. As urban population increases, there must be space to accommodate these populations. People compete for the site first for residence and second for investment depending upon accessibility within the urban framework (Chen, 2000). Therefore, it can be concluded that the increasing population has resulted in extensive forest clearing and exploitation of existing forests for fuel wood, fodder, and construction materials.

Received: 16.12.2023

Accepted: 21.12.2023

Published on: 30.12.2023

Table 2: Shows challenges encountered to ensure sustainable forest resources

No	Challenges	Rating in percentage				
		SA	A%	DA	SD	UD
		%		%	%	%
4.1	Lack of alternative source of energy	39.6	41.7	12.5	-	-
4.2	Using forest wood as a building material	43.8	20.8	15.6	10.4	3.1
4.3	Unscientific forest exploitation	41.7	26.0	-	-	26
4.4	Absence of commercial wood by small enterprise	62.5	31.3	-	-	-
4.5	Expansion of settlement	72.9	18.8	2.1	-	-
4.6	Infrastructure development (health, transportation)	10.4	5.2	46.9	26.0	5.2
4.7	Lack of temporary and continuous action	43.8	31.3	10.4	8.3	-
4.8	Knowledge gap/low awareness	37.5	42.7	10.4	3.1	-
4.9	Heavy dependency on biomass energy for HH consumption	81.3	12.5	-	-	-
4.10	Illegal logging	93.8	-	-	-	-
4.11	Poor valuation of forest and woodland resources	88.5	5.2	-	-	-

Source: Compiled from household survey, 2022

The findings (table, 2) revealed that more than 72 percent of households replied that infrastructure development was not a challenge to ensure the sustainability of forest resources. However, all the rest variables were the major challenges of forest sustainability especially illegal logging (93.8 percent), poor valuation of forest (88.5 percent), heavy dependency for energy (81.3 percent), expansion of settlements (72.9 percent) and others? The law is a powerful tool for shaping sustainable forest sector management and conservation. Law sets the bounds for acceptable behavior and is followed by punishment if violated. Lack of training and education, without a better understanding of how the forest works, what influences its structures, dynamics, and resilience, there is little prospect of any sustainable future for the remaining forests. Fuel wood collection, together with land clearing for Agriculture, illegal settlement within forests, logging, and illegal trade (fuel wood, charcoal), cutting tree for construction material has resulted in the deterioration of forests and forest resources. In general, the result clearly indicated that there was no any restriction of cutting, collecting and selling natural vegetation resources at the entire directions of the surrounding.

Spatial pattern of forest coverage

Received: 16.12.2023

Accepted: 21.12.2023

Published on: 30.12.2023

Vegetation's have been cleared for the purpose of settlement, firewood, construction materials and farmlands. Local elders and key informants told the researcher that some areas which had been once covered by forests some two decades back are currently devoid of natural vegetation.

Table 3: Shows factors for the decrease of forests

No	Causes	Rating				
		SA in %	A in %	DA in %	SD in %	UD in %
2.1	Horizontal expansion of the town	83.3	10.4	6.3	-	-
2.2	Extraction of forest for construction purpose	62.5	15.6	18.8	3.1	-
2.3	Frequent collection of fire wood	88.5	11.5	-	-	-
2.4	Insufficient or non-existence of rules	26.0	15.6	31.3	5.2	21.9
2.5	Cutting of trees for charcoal production	72.9	20.8	2.1	4.2	-

Source: Compiled from household survey, 2022

The variable consisted in table 3 are five causes. Accordingly, frequent collection of fire wood influenced the highest (88.5 percent) of the respondents, horizontal expansion of the town (83.3 percent), charcoal (72.9percent), construction material and insufficient rules constitute (62.5 percent) and (26percent) respectively. Therefore, forest destruction was accelerated by collection of fire wood and horizontal expansion of the town. Implementation of investment and settlement policies without assessing environmental impact is also a major problem. The demand of forest products and cutting of trees for the construction of house and fence has been aggravated the destruction of forest in Birbir town. From the respondent s" point of view about (72.9 percent, table 3); it was evident that cutting trees to fulfill the demand of constructional material is considered to be the causes of forest degradation around the town.

Summary

The results of investigation showed that, the area, once two decades years ago were under forest are changed into other land uses mainly to build- up area. The section town close to the forest area has high degree of destruction. Rising demand for forest product, population growth, low perception of inhabitants towards environmental roles of forest, lack of alternative economic activities were the major causes of forest destruction.

The finding of the research also showed that high population growth rate and the subsequent rising demands for crop land, construction material, fuel wood, charcoal, resettlement and low public awareness were the main factors responsible for the decline of forest areas. Moreover, inadequate regulation and enforcement of existing laws designed to protect and manage forests are either insufficient or non-existent. The analysis result on domestic energy

Received: 16.12.2023

Accepted: 21.12.2023

Published on: 30.12.2023

consumption had shown that majority of the population in the study area use biomass fuel for domestic energy particularly in Jinja town. Almost all of the participants of the studied households have been using biomass energy for domestic cooking in one way or another. Besides, most of the towns of Jinja dwellers depend on purchased fire wood for its energy consumption. This encourages those groups of people who are engaged in the activity of illegal tree cutting and harvesting to further exploitation of the existing forest resources found in the study area.

The finding also identified that residents in the study area are poor. The use of forest products for fuel wood and to supplement income is high. There is also a serious lack of public awareness about the necessity and the environmental, social and economic benefits of trees. Consequently, the poor do not hesitate to cut down trees because they need to fulfill their current requirement.

Conclusion

Analyses of the results have shown that the increase in built-up areas in Jinja town council was characterized by horizontal physical expansion against the surrounding forest and farm lands. In addition, as the survey data analyses of the variables indicate, family size affects forest resources in the area. Contrary to this, most of the households have not been well informed about family planning and the problems related to large family size. Generally, the findings identified from the analysis revealed that the forest resources have been utilized in unsustainable manner due to population growth with other variables such as demand of forest products for construction, fire wood and Charcoal production, income generation and expansion of built up areas along the margin and even inside the forest areas. This circumstance leads to the depletion of forest resources in the study area. Hence, this type of research was very useful for the concerned bodies in protecting the remaining forest resources from devastations.

Recommendation

Based on research findings, the following recommendations are considered to be vital in enhancing sustainable forest management and conservation in the study area:

Urban expansion and population growth is identified as a problem at the study area.

Thus, to prevent the population pressure and its impact on the forest resources and there by improve the living conditions of the inhabitants, strong family planning, awareness creation campaigns with adequate health services should be introduced in the study area.

There should be collaboration between Education office, Environment authority, Mines and energy and office of Agricultural and rural development to publicize energy know- how among the society. In addition, providing fast growing tree species to meet the fuel wood demand and construction material instead of relying on forest.

References.

- Benard, B., & Moses, M. (2023). *EFFECTS OF URBANIZATION ON WETLAND MANAGEMENT IN UGANDA, A CASE OF LUBIGI WETLAND IN KAMPALA*. 2(4), 137–145.
- Denis, A., & Sophie, N. (2023). *THE INFLUNCE OF SCHOOL ENVIRONMENT ON STUDENTS' PERFORMANCE IN MATHEMATICS IN SECONDARY SCHOOLS. A CASE STUDY OF MUKURA TOWN COUNCIL, NGORA DISTRICT* (Vol. 2).
- Elifaazi, M., Ali, B., & Irumba, A. (n.d.). *THE IMPACT OF CLIMATE PATTERNS ON THE FARMING ACTIVITIES IN UGANDA. A CASE OF KIBIBI TOWN COUNCIL*.
- Esther, B., Moses, M., & Sarah, A. (n.d.). *A STUDY ON THE IMPACT OF URBANISATION ON FOREST COVER IN UGANDA, ACASE STUDY OF JINJA TOWN COUNCIL-JINJA DISTRICT*.
- Irumba, A., Nelson, K., & Kazaara, A. I. (2023). THE EFFECT OF PLASTIC WASTE ON THE ENVIRONMENT IN UGANDA, A CASE STUDY OF JINJA DISTRICT. In *METROPOLITAN JOURNAL OF BUSINESS & ECONOMICS (MJB)* (Vol. 2, Issue 4).
- Jackline, N., Nicholas, K., Prudence, K., Christopher, F., Moses, N., Kazaara, A. I., & Ruth, N. (2023). Examining The Eeffect Of Urbanization On Wetlands Management In Uganda. A Case Of Lubigi Wetland, Wakiso District. In *International Journal of Academic and Applied Research* (Vol. 7, Issue 3). www.ijeais.org/ijaar
- Niyonzima, E. (2023a). Assessing the Impacts of Rural-Urban Migration on Agriculture Production in Rwanda: A Case Study of Huye District, in Southern Province. In *International Journal of Academic Multidisciplinary Research* (Vol. 7). www.ijeais.org/ijamr
- Niyonzima, E. (2023b). Assessing the Impacts of Rural-Urban Migration on Agriculture Production in Rwanda: A Case Study of Huye District, in Southern Province. In *International Journal of Academic Multidisciplinary Research* (Vol. 7). www.ijeais.org/ijamr
- Peter, O., & Nicholas, K. (2023). EFFECTS OF URBANISATION ON ENVIRONMENTAL MANAGEMENT IN UGANDA. A CASE STUDY OF MPOLOGOMA SWAMP, KIBUKU DISTRICT. In *Metropolitan Journal of Social and Educational Research* (Vol. 2, Issue 1).
- Salahub, J. E., de Boer, J., & Gottsbacher, M. (2018). Introduction: Global South theories of urban violence, poverty, and inequalities. In *Social Theories of Urban Violence in the Global South: Towards Safe and Inclusive Cities*. <https://doi.org/10.4324/9781351254724>