

Influence Of Deforestation on Climate Cover in Kisoro District: A Case Study of Busanza Subcounty.**Akankwasa Eunice¹, Sekiswa Peter²****1,2 Metropolitan International University.****ABSTRACT**

The major objective of this study lied in finding out whether there was a relationship between deforestation and desertification in Busanza sub county, Kisoro District. Other objectives included: To establish the level of deforestation in Busanza sub-county and to find out the extent of desertification in Busanza Sub-County. The study adopted a descriptive and observational research design and simple random probability sampling technique were used to obtain a sample size 76 respondents of from Mubende Municipality using solvins formula. Objective one aimed at finding out the extent of Mineral Extraction in Mubende District. The researcher concluded on this objective from the findings that the extent of Mineral Extraction is at a higher extent (74.0%) and this is due to many factors which include high need for abundant minerals like Objective one aimed at finding out the level of Deforestation in Busanza sub-county, Kisoro District. The researcher concluded on this objective from the findings that the level of deforestation is high and this is attributed to high demand for timber and need more land for agriculture. Objective two aimed at finding out the extent of Desertification in Busanza Sub- County. The researcher concluded on this objective that the extent of desertification is very high and this is witnessed with long periods of sunshine. The third objective aimed at establishing at the relationship between Deforestation and Desertification in Busanza sub-county. The there is a high positive correlation/relationship between Deforestation and Desertification. The researcher concluded that deforestation is practiced at a high level in order to get timber and fire wood, this leaves the land bear and in a long run led to reduction in rainfall amounts which created desert- like conditions in the area like long periods of drought. The researcher recommended that farmers to practice good farming methods like afforestation, re- afforestation and agro-forestry in order to conserve the forests.

Key words: Deforestation and Climate Cover**Background of the study**

According to (Elifaazi et al., n.d.), deforestation is the global loss of forest areas due to other uses such as agricultural arable land, urbanization, or mining. (Derick et al., n.d.) defined deforestation as the removal of trees, or the conversion of a forested area into cleared land. Deforestation is the widespread removal of trees or forests. Deforestation is the removal of forest cover from land that has been converted into non-forest uses (Suzan & Aggrey, 2023). Deforestation is the process of clearing or severely cutting down a forest or other wooded area, leaving few or no trees (Esther et al., n.d.). According

to (Kilama Luwa et al., 2021), desertification is the process by which fertile land becomes desert, usually due to drought or deforestation. Thirgood (1981) also defines desertification as the process by which land becomes desert. Furthermore, Murphey (1983) defined desertification as the rapid depletion of plant life and loss of topsoil at desert margins and in semiarid regions due to a combination of drought and human overexploitation of grasses and other vegetation (James & Charles, 2023). Desertification is the process by which a plot of land becomes dry, barren, and unfit for growing trees or crops. Deforestation has been

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practiced by humans since ancient times. The Mediterranean was deforested before the fifth century, and Europe experienced a series of deforestation and regeneration before the sixteenth century. Most of the Haitian rainforest was already destroyed by the end of the 19th century (Lutaaya et al., 2023), and in Ethiopia, India, and Lebanon forests were depleted much earlier (Eckholm, 1976). While deforestation has recently slowed in industrialized countries, it has accelerated in developing economies. According to (Patrick et al., 2023), about 37,000 km² of forested areas are cleared annually in tropical Africa. Recent estimates by (Patrick et al., 2023) indicate that the rate of deforestation in tropical Africa exceeds the rate of tree planting by 29 to 1. If current deforestation trends continue, all the closed and open productive forests of tropical Africa are expected to be depleted. over nine decades. Desertification reduces land productivity and

contributes to poverty. This is because primary natural resources—fertile topsoil, vegetation cover, and healthy crops—are the first to disappear in the face of desertification. As a result, arid countries around the world tend to have the lowest gross domestic product (GDP) per capita and the highest infant mortality rates. Land degradation in arid regions exacerbates this problem (Lydia et al., 2023). A decline in soil fertility reduces crop production and additional sources of income (Annet & Julius, 2023). Land degradation can also trigger a vicious cycle of environmental degradation, impoverishment, migration and conflict, often also threatening the political stability of affected countries and regions. It is estimated that more than 250 million people worldwide are directly affected by desertification, and approximately one billion are at some level threatened by the effects of desertification (Esther et al., n.d.).

Statement of the problem

The problem lied in finding out whether there was a relationship between deforestation and desertification in Busanza sub county, Kisoro District.

Major objective

The major objective of the study was to find out the relationship between deforestation and desertification in Busanza sub county, Kisoro District.

Specific objectives

1. To establish the level of deforestation in Busanza sub-county.
2. To find out the extent of desertification in Busanza Sub-County.
3. To find out the relationship between deforestation and desertification in Busanza sub county, Kisoro District.

Research questions

1. What is the level of deforestation in Busanza sub-county?
2. What is the extent of desertification in Busanza Sub-County?
3. What is the relationship between deforestation and desertification in Busanza sub county, Kisoro District?

Methodology.

The study used a descriptive research design because of the nature of the variables that were at hand to produce data required for qualitative and quantitative analysis to allow simultaneous description of views, perceptions and beliefs at

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any single point in time (White B, 2000). The researcher considered Busanza sub-county as a case study to find out the relationship between deforestation and desertification in this area. In this study, the researchers went to different respondents including the LC 1 Chairman and District Environment Officer. The researcher also selected 40 community members and 14 farmers. The researcher further selected to 20 farmers from Busanza sub-county and this selection were randomly across all residents in the study area. The study sample comprised of 76 respondents out of 95 of the total population, this was derived from using the Slovincs formula, where 40 respondents were community members, 20 respondents were farmers and 14 were Traders. 01 District environmental officer and 01 LC1Chairperson were considered as the key informants in the study sample. The respondents to interview included community members, traders, local council I chairperson, District environmental officer of Kisoro District. These were used to collect data from all industrial workers and community members from Hima cement factory, Kasese district. The validity of the instruments was established under the guidance of the supervisor (Dr. Arinaitwe Julius). To establish the reliability of the research instruments, the researcher carried out a pilot test of the instruments using another similar group with the same characteristics as the one targeted in the study. Quantitative data analyses were carried out using a software application called Statistical Package for Social Scientists (SPSS). Cross tabulations, Pearson's correlation coefficient, regression, and ANOVA tests and analyses were carried out on the data to examine the relationships between assessment of learning and student academic performance (Nelson et al., 2022). Qualitative data was organized according to themes identified from research questions and analyzed using content analysis. Data from interviews were organized and presented inform of report.

Results.

The level of Deforestation in Busanza Sub- County, Kisoro District

This Section describes the independent variable (Deforestation). The independent variable was addressed in Section B of the questionnaire for respondents.

Table 1: The level of Deforestation

	N	Range	Minimum	Maximum	Mean	Std. Deviation
level of level of deforestation	60	2.00	1.00	3.00	3.567	.85809
Valid N	60					

The level of deforestation in Busanza sub-county was analyzed and interpreted using the mean which was 3.567, the mean is close to code 4 of the Likert Scale, hence declaring a high level of deforestation in Busanza sub-county. This is because natives cut down trees for timber, agriculture, road construction and settlements. This shows that people in Busanza Sub- County practice deforestation at a high level in order to get timber and fire wood, this leaves the land bear and in a long run led to reduction in rainfall amounts which created desert-like conditions in the area like long periods of drought.

Table 2: Shows the causes of deforestation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agriculture	18	30.0	30.0	30.0
	Settlement	7	11.7	11.7	41.7
	Industrialization	12	20.0	20.0	61.7
	High need for timber	23	38.3	38.3	100.0
	Total	60	100.0	100.0	

From table 4.3.1, it was found out that majority of 38.3% of the respondents revealed that the high need for timber in Kisoro District has caused people to cut down trees at a high level, agriculture had 30.0%, settlement had 11.7% and industrialization had 20.0%.

Relationship between Deforestation and Desertification in Busanza Sub- County

Table 3: Showing Pearson Correlation between deforestation and desertification

		Deforestation	Desertification
Deforestation	Pearson	1.00	.709
	Correlation		.000
	Sig. (2-tailed)	.60	.60
	N Pearson		
Desertification	Correlation	.709	1.00
	Sig. (2-tailed)	.000	
		.60	.60

Table 4.5 indicates that there is a very strong positive relationship between deforestation and desertification at $r = 0.709$ and since the sig. value (.000) was far less than 0.01, which is the maximum level of significance required declaring a significant relationship between deforestation and desertification, this implies that the when the level of

deforestation is high, the level of desertification is also high, and when the level of deforestation is low, the level of desertification is also low. This shows that people in Busanza Sub-county practice deforestation at a high level in order to get timber and fire wood, this leaves the land bear and in a long run leads to reduction in rainfall amounts which created desert-like conditions in the area like long periods of drought.

Discussion

The level of deforestation in Busanza sub-county was analyzed and interpreted using the mean which was 3.567, the mean is close to code 4 of the Likert Scale, hence declaring a high level of deforestation in Busanza sub-county. This is because natives cut down trees for timber, agriculture, road construction and settlements. This shows that people in Busanza Sub- County practice deforestation at a high level in order to get timber and fire wood, this leaves the land bear and in a long run led to reduction in rainfall amounts which created desert-like conditions in the area like long periods of drought. The extent of Desertification in Busanza sub-county was analyzed and interpreted using the mean which was 4.5800, the mean is close to code 5 of the Likert Scale, hence declaring a high extent of deforestation in Busanza sub-county. This is because natives cut down trees for timber, agriculture, road construction and settlements. The study found out that that there is a very strong positive relationship between deforestation and desertification at $r = 0.709$ and since the sig. value (.000) was far less than 0.01 (Nelson et al., 2023), which is the maximum level of significance required declaring a significant relationship between deforestation and desertification, this implies that the when the level of deforestation is high, the level of desertification is also high, and when the level of deforestation is low, the level of desertification is also low. This shows that people in Busanza Sub- County practice deforestation at a high level in order to get timber and fire wood, this leaves the land bear and in a long run led to reduction in rainfall amounts which created desert-like conditions in the area like long periods of drought.

Conclusion of the findings

Objective one aimed at finding out the level of Deforestation in Busanza sub-county, Kisoro District. The researcher concluded on this objective from the findings that the level of deforestation is high and this is attributed to high demand for timber and need more land for agriculture. Objective two aimed at finding out the extent of Desertification in Busanza Sub- County. The researcher concluded on this objective that the extent of desertification is very high and this is witnessed with long periods of sunshine. The third objective aimed at establishing at the relationship between Deforestation and Desertification in Busanza sub-county.

Recommendations of the study

On the basis of the findings of this study and conclusions drawn, the following are the recommendations regarding the relationship between Deforestation and Desertification in Busanza sub-county, Kisoro District.

The researcher recommended the government to provide enough sensitization of the masses/people about the dangers of deforestation and encourage planting of trees.

The researcher recommended farmers to practice good farming methods like afforestation, re- afforestation and agro-forestry in order to conserve the forests.

The researcher recommended the community members to always conserve forest for future generations.

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