

The Role of Higher Learning Institutions (HLIs) in the Sustainable Management of Natural Resources in Rwanda

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Abstract

This study investigates the role of Higher Learning Institutions (HLIs) in the sustainable management of natural resources in Rwanda. Despite a considerable number of HLIs that strive to provide education for all, Rwanda faces significant challenges related to the mismanagement of natural resources. To address this issue, a quantitative study was conducted utilizing descriptive and correlational research designs. A sample of 100 students was randomly selected from three different HLI campuses, and data were collected using a self-developed questionnaire. Analysis was performed using SPSS version 23. The results revealed a low mean score across various aspects of natural resource understanding, including awareness ($M = 2.7$, $SD = 0.86$), knowledge of resource types ($M = 2.75$, $SD = 0.86$), utilization ($M = 2.7$, $SD = 0.86$), sustainable use ($M = 2.72$, $SD = 0.86$), management ($M = 2.77$, $SD = 0.86$), and exploitation ($M = 2.75$, $SD = 0.96$). The absence of strong mean scores across all items indicates that HLI students possess an inadequate understanding of sustainable natural resource management in Rwanda. Moreover, the standard deviations greater than 0.5 in all questions suggest diverse opinions among HLI students regarding natural resource management. To mitigate this issue, it is essential to develop a curriculum related to natural resource knowledge that equips HLI students with the necessary skills and knowledge to manage and share information about these resources in their communities effectively.

Keywords: *Natural resources, sustainable management, Higher Learning Institutions, social studies students*

Introduction

Education serves as a powerful catalyst for transformation across social, economic, political, and cultural structures. It nurtures responsible, patriotic citizens who prioritize their nation's welfare, fosters critical thinking, and enables informed decision-making, particularly concerning environmental issues. In Rwanda, education plays a pivotal role in managing natural resources.

Natural resource management encompasses the stewardship of resources such as land, water, soil, flora, and fauna, emphasizing the impact of management practices on the quality of life for current and future generations. It integrates land use planning, water management, biodiversity

conservation, and sustainable practices across sectors such as agriculture, mining, tourism, fisheries, and forestry. This approach recognizes that livelihoods depend on the health and productivity of natural landscapes, making individual stewardship essential (Thakadu, 2005).

Given the critical relevance of natural resources to Rwanda's economic development, educational initiatives promoting sustainable management practices are imperative. Social studies education plays a vital role in raising awareness about the physical environment and equipping students with the knowledge and skills necessary to manage and protect these resources sustainably (GES, 2010).

Problem Statement

The sustainable management of natural resources has become a global issue due to poor management practices. These problems are rarely confined to a single discipline, engaging multiple fields within the biophysical and social sciences. Therefore, integrating knowledge and skills across disciplines can enhance the ability to manage natural resources sustainably.

In Rwanda, integrating social studies education in the curriculum aims to address the relationship between humans and their physical and social environments. Despite its inclusion, social studies have had little impact on ensuring the sustainable management of natural resources. This may stem from inadequate curriculum content or ineffective teaching methods. Hence, this study examines the adequacy of the social studies curriculum in covering topics related to sustainable natural resource management.

Methodology

The study was conducted in Rwanda, with a survey distributed to students selected from Higher Learning Institutions. A sample of 100 students was randomly selected from three schools within these institutions. The survey questionnaire, developed and modified from items related to sustainable natural resource management, was analyzed using SPSS.

Table 1: Weighted Averages for 5-Point Likert Scales

Weighted Average	Result	Result Interpretation
1-1.79	Strongly Agree	Very Influential
1.80-2.59	Agree	Influential
2.60-3.39	Neutral	Neutral/Do Not Know
3.40-4.19	Disagree	Uninfluential
4.20-5	Strongly Disagree	Very Uninfluential

Results and Discussion

Table 2 provides insights into respondents' perceptions of various aspects of natural resources, revealing a generally neutral stance across most statements. The mean scores, ranging from 3.16 to 3.49, indicate that respondents neither strongly agree nor disagree with the statements presented. For instance, the understanding of natural resources, sustainable use, and management are all viewed with neutrality, suggesting that respondents have a moderate level of awareness and engagement with these topics. This neutrality reflects a balanced but perhaps uncertain understanding of natural resources.

Despite the overall neutral stance, there is notable heterogeneity in responses, as indicated by the standard deviations, which range from 1.08 to 1.26. These values suggest a significant variation in opinions among respondents, highlighting the diverse perspectives and knowledge levels within the group. The highest standard deviation, 1.26, is associated with the reasons for the insufficient use of natural resources, indicating particularly varied opinions on this issue. This variability may be due to differences in educational background, access to information, or personal experiences with natural resource management.

Interestingly, while most statements received a neutral interpretation, the exploitation of natural resources and the problems associated with their effective exploitation were viewed as uninfluential, with mean scores of 3.44 and 3.49, respectively. This suggests that respondents do not see these issues as significantly impacting their understanding or opinions on natural resources. The standard deviations for these statements still indicate heterogeneity, but the uninfluential interpretation points to a potential gap in awareness or concern about these critical aspects of natural resource management.

Table 2: Results for All Factors

Statement	Mean	Interpretation	Std. Deviation	Interpretation
Understanding of Natural Resources	3.17	Neutral	1.13	Heterogeneity
Types of Natural Resources	3.35	Neutral	1.10	Heterogeneity
Utilization of Natural Resources	3.30	Neutral	1.16	Heterogeneity
Sustainable Use of Natural Resources	3.21	Neutral	1.11	Heterogeneity
Management of Natural Resources	3.27	Neutral	1.13	Heterogeneity
Exploitation of Natural Resources	3.44	Uninfluential	1.08	Heterogeneity
Importance of Natural Resources to National Development	3.16	Neutral	1.13	Heterogeneity
Problems of Effective Exploitation of Natural Resources	3.49	Uninfluential	1.10	Heterogeneity
Reasons for Insufficient Use of Natural Resources	3.41	Uninfluential	1.26	Heterogeneity

Statement	Mean	Interpretation	Std. Deviation	Interpretation
Efficient Utilization of Natural Resources in Rwanda	3.34	Neutral	1.22	Heterogeneity
Overall,	3.314			

Based on the overall, the data reflects a group of respondents who are generally neutral but exhibit diverse views on natural resources. The heterogeneity in responses underscores the complexity of natural resource issues and the varying levels of understanding and engagement among the population. This suggests that while there is baseline awareness, there may be a need for targeted education or communication strategies to address the gaps and ensure a more informed and cohesive understanding of natural resources and their management.

Conclusion

Despite Rwanda's efforts in promoting education for all, knowledge and skills related to sustainable natural resource management are still lacking among students. The current curriculum does not adequately prepare students to manage natural resources effectively. Essential concepts such as the types, utilization, and management of natural resources are not sufficiently covered.

Recommendations

To fulfill the goal of natural resource management in Rwanda, an integrated approach to teaching social studies should be adopted by higher learning institutions. This will ensure an effective combination of knowledge, values, skills, and experiences from other subject areas, thereby enhancing the sustainable management of natural resources. In addition, higher learning institutions should:

Enhance Education and Awareness Programs: There is a need to develop and implement targeted educational programs that can deepen the public's understanding of natural resources, particularly focusing on their importance to national development and sustainable management practices. These programs should aim to move the population from a neutral stance to a more informed and engaged position.

Promote Public Engagement in Resource Management: Initiatives that encourage public participation in management and sustainable use of natural resources should be promoted. This could include community-based projects, public consultations, and the involvement of local stakeholders in decision-making processes to increase the perceived relevance of these issues.

Address Knowledge Gaps Through Tailored Communication: Given the heterogeneity in responses, it is important to develop tailored communication strategies that address the specific knowledge gaps and concerns of different demographic groups. This could involve using various media platforms and messaging tailored to different age groups, educational levels, and geographic regions.

Strengthen Policy and Enforcement Mechanisms: To address the uninfluential perceptions of natural resource exploitation and the challenges associated with effective exploitation, there is a

need to strengthen policies and enforcement mechanisms. Clear regulations, coupled with consistent enforcement, can help elevate the importance of these issues and ensure that they are taken more seriously by the public and relevant stakeholders.

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