A CROSS-SECTIONAL CONTRIBUTION OF COMMUNITY CONSERVATION PRACTICES FOR IMPROVING MANAGEMENT OF KIBAALE NATIONAL PARK, SOUTH WESTERN UGANDA .

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Abstract

Background:

Deforestation and forest degradation are recognized as some of the primary causes of global warming, contributing to approximately 15% of global greenhouse gas emissions and thereby posing a significant challenge for climate change in East Africa. Kibale Forest National Park (KFNP) has experienced deforestation and degradation for numerous decades due to population pressure from neighboring communities whose livelihoods depend on crop production and livestock rearing adjacent to the forest. Despite its significance, documentation of community conservation practices surrounding KFNP has been inadequate. Therefore, the objective of this study was to establish the contribution of the local community to the conservation of and expansion of KFNP located in South Western Uganda.

Methodology:

A cross-sectional research design was employed, and a sample of 200 respondents from three parishes, namely Bigodi, Busiriba, and Kikoni, which border with KNP and lie along Kamwenge-Fort Portal Road, were selected.

Data were collected using questionnaires and focus group discussions and analyzed through SPSS version 20.

Results:

The results indicate that community-based initiatives play a pivotal role in forest conservation, and the practices of local people aimed at enhancing their livelihoods and reducing illegal activities in the protected area, thereby promoting biodiversity conservation.

Conclusion:

In conclusion, this study contributed to the existing literature on community participation in forest conservation in Kibale Forest National Park.

Recommendations:

The study recommends that local communities should be actively involved in the policy formulation, planning, and management of KFNP. To reduce illegal activities and human-wildlife conflicts and enhance biodiversity conservation in KFNP, training in alternative sources of livelihood, strengthening law enforcement, and the provision of soft loans are recommended.

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1. INTRODUCTION.

Community forest conservation is globally recognized as an effective method of forest management.

Organized groups of indigenous people have made significant contributions to forest management in Latin America where the rights of peasants are highly valued (Cronkleton et al., 2011), and in African countries (FAO, 2011). Local communities, once entrusted with the mandate to manage, can show positive forest conservation. Effective forest management requires all stakeholders' engagement in planning, implementation, monitoring, and evaluation of the strategic plans for natural resource conservation (P. L. Taylor, 2012). Locally organized groups are essential in forest management and the enhancement of forest cover. In some communities adjacent to National parks, concessions have been given by the local government to allow people to use and manage part of the forest for their benefit and biodiversity. This win-win situation has proved successful in some East African countries including Tanzania and Kenya. Involvement of local communities in decision-making and law-making empowers members to feel a sense of ownership hence boosting their efforts to conserve resources. This is especially important when women are involved in forest conservation. They are the most beneficial communities because they use them for firewood collection and non-timber products for their families (Colfer & Minarchek, 2012). Community forestry management in Africa is in its infancy stage compared to other continents. Effective forest conservation has the potential to contribute to the enhancement of reducing emissions from degradation and deforestation, and biodiversity conservation (REDD+) in Africa.

Deforestation and Forest degradation in Uganda have escalated in the 21st Century. Previous studies estimate that annually 2% of forest cover has been lost in the last decade due to poverty and high population (Obua *et*

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al, 2010; Brickell et al, 2012). The population of Uganda is mainly agricultural dependent and has reached more than 45 million people in the present decade. To make matters worse, Uganda's population has one of the highest annual growth rates of 3.03 people in Africa (UBOS, 2014), the majority being the reproductive age group. Most Ugandans have insufficient land for supporting their livelihood thus forests and national parks become victims.

Policy and legal framework of Uganda do not favor REDD+ implementation (Brickell et al., 2012) thus increasing forest degradation and deforestation. High levels of household poverty might be responsible for hampering the REDD+ program in most Ugandan forests. The need for improving the income of community members adjacent to the parks is reported to contribute to the reduction of forest cover and degradation (Bush et al, 2011). Week social capital, political instability, and lack of community involvement in park planning have been reported as some of the challenges facing REDD+ implementation in the Greater Virunga landscape (Kenfack, 2013) and this may as well be true for Kibale Forest National Park in Uganda. Moreover, studies show that communities surrounding forests lack sufficient awareness regarding the rules related to forest clearing thus enhancing forest degradation. Poor implementation of forest management requirements has been cited as the major constraint facing REDD+ implementation in developing countries (Kanowski et al, 2011) and this is likely to be true in Uganda. There is poor documentation of community conservation strategies to decrease deforestation and forest degradation in Uganda hence the need for this study.

2. RESEARCH METHODOLOGY.

This investigation employed a cross-sectional research design to gather data from individuals situated in three particular parishes adjacent to Kibale Forest National Park. Kibale National Park is situated in the western region of Uganda and is located approximately 348 kilometers away from Kampala, the capital city of Uganda. Addi-

tionally, it is approximately 26 kilometers southeast of Fort Portal town. The data collection techniques utilized in this study were quantitative and entailed both questionnaire surveys and interviews, thereby allowing researchers to obtain empirical evidence. To ensure maximum accuracy and completeness of the data, both open-ended and closed-ended questionnaires were deployed and interviews were conducted with 200 households near KFNP. The data was collected from the 15th of July to the 22nd of July 2018 and was subsequently corrected up until the 25th. The quantitative data obtained from the research was analyzed using the Statistical Package for Social Sciences (SPSS) and was presented in a simple table containing frequencies and percentages, as reported by IBM (2011). The data derived from the interviews was then utilized to provide a thorough explanation of the findings from the quantitative analysis. In this study, three parishes including: - Bigodi, Busiriba, and Kikoni, which border KNP and lie along Kamwenge-Fort Portal Road, were meticulously selected. The participants recruited for the study were restricted to a total of 200 individuals who had consented to participate in the research. Purposive sampling based on proximity to the forest resource to select participants for the study.

2.1. Ethical clearance.

Ethical approval was obtained from the Bishop Stuart University Research Ethics Committee. All participants consented to participate in the study after being explained about objectives, purpose, privacy and ethical consideration, and assurance regarding the voluntary nature of participation.

2.2. Data Management and Analysis.

The collected data was cleaned, sorted, and coded. It was then entered into SPSS for data analysis. It is presented in descriptive statistics (frequencies, percentages, mean and standard deviation) for easy interpretation. Note that a mean greater than 3 indicates a best option towards forest conservation and a mean value less than 3 indicates a poor option towards forest conservation.

Standard deviation indicates the dispersion from the mean value and its value close to 1 or above shows a higher dispersion from the meanwhile a mean value close to zero shows a lower dispersion

3. RESULTS

This section spells out the contribution of local communities to forest conservation in Kibale Forest National Park in Southwestern Uganda. Responses of the respondents were captured on a Likert scale ranging from (Best, Better, Good, Fair, and Poor). Data was collected and analyzed using SPSS and it is presented in descriptive statistics (frequencies, percentages, mean and standard deviation) for easy interpretation. Note that a mean greater than 3 indicates a best option towards forest conservation and a mean value less than 3 indicates a poor option towards forest conservation. Standard deviation indicates the dispersion from the mean value and its value close to 1 or above shows a higher dispersion from the mean while a mean value close to zero shows a lower dispersion as shown in table 1.

Table 1a exhibits the indigenous practices of the local inhabitants aimed at improving their livelihoods and controlling unlawful activities within the protected area, thus contributing to the enhancement of biodiversity conservation.

The statistical analysis discloses that the mean and standard deviation values are 2.6931 and 1.69197, respectively. As per the survey, 26% of the participants opine that the adoption of alternative sources of fuel, such as biogas and briquettes, constitutes the optimal alternative for conserving Kibale forest national park. Meanwhile, 7% of the respondents perceive it as a superior option, 13% deem it a good option, 9% consider it a fair option, 39.5% regard it as an unsatisfactory option, and 5.5% abstained from expressing their opinion on the matter. Based on the findings, it can be inferred that utilizing alternative fuel sources for cooking is not the most viable option for conserving Kibale forest national park in South Western Uganda. The findings demonstrate that the mean and standard deviation values for the controlled collection of firewood from

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		Best	Better	Good	Fair	Poor	Valid Total	Missing	Total	mean	SD
Use of alternative source of fuel for cooking like biogas, briquettes etc	Freq.	52	14	26	18	79	189	11	200	2.6931	1.69197
	%	26	7	13.0	9	39.5	94.5	5.5	100		
Controlled firewood collection from the forest	Freq.	42	16	27	33	71	189	11	200	2.6032	1.58322
	%	21	8	13.5	16.5	35.5	94.5	5.5	100		
Use energy saving technologies in communities	Freq.	55	26	30	30	46	187	13	200	3.0749	1.57082
	%	27.5	13	15	15	23	93.5	6.5	100		
Avoiding setting fires	Freq.	62	12	21	24	68	187	13	200	2.8717	1.72415
	%	31	6	10.5	12	34	93.5	6.5	100		
Reforestation inside forest	Freq.	71	21	21	15	55	183	17	200	3.2077	1.70988
	%	35.5	10.5	10.5	7.5	27.5	91.5	8.5	100		
Allowing bee keeping and collecting honey	Freq.	51	17	18	21	80	187	13	200	2.6684	1.70616
	%	25.5	8.5	9	10.5	40	93.5	6.5	100		
Tree planting on marginal land adjacent to the forest	Freq.	63	21	24	22	58	188	12	200	3.0585	1.67772
	%	31.5	10.5	12	11	29	94	6	100		

Table 1a) Community Conservation Practices for the People living adjacent to KFNP.
Source: Field 2018

		Best	Better	Good	Fair	Poor	Valid Total	Missing	Total	mean	SD
Giving Government land to communities for tree plantation to conserve the forest	Freq.	89	13	14	16	55	187	13	200	3.3476	1.76952
	%	44.5	6.5	7	8	27.5	93.5	6.5	100		
Provide Improved seedlings to communities to expand forest areas	Freq.	60	15	17	23	72	187	13	200	2.8503	1.73795
	%	30	7.5	8.5	11.5	36	93.5	6.5	100		
Training communities on tree plantation and management	Freq.	46	18	28	23	73	188	12	200	2.6862	1.63269
	%	23	9	14	11.5	36.5	94	6	100		
Paying communities for the trees planted in their marginal land	Freq.	90	9	10	9	67	185	15	200	3.2378	1.84859
	%	45	4.5	5	4.5	33.5	92.5	7.5	100		
Support community conservation and protection of buffer zone	Freq.	56	19	15	10	79	179	21	200	2.7933	1.77586
	%	28	9.5	7.5	5.0	39.5	89.5	10.5	100		
Provide loans to communities to boost their business	Freq.	85	18	16	9	60	188	12	200	3.3138	1.77397
	%	42.5	9	8	4.5	30	94	6	100		
Strengthen law enforcement and penalties for law breakers	Freq.	65	0	26	28	69	188	12	200	2.9312	1.75358
	%	32.5	0	13	14	34.5	94	6	100		
Create more laws and policies to enhance KFNP conservation	Freq.	48	21	26	23	69	187	13	200	2.7647	1.64226
	%	24	10.5	13	11.5	34.5	93.5	6.5	100		
Use hand craft for boosting house hold income in the area	Freq.	46	20	24	15	75	180	20	200	2.7056	1.67698
	%	23	10	12	7.5	37.5	90	10	100		
Community participation in forest monitoring and conservation	Freq.	70	16	24	16	58	184	16	200	3.1304	1.71918
	%	35	8	12	8	29	92	8	100		
Community participation in reporting of illegal logging to park management	Freq.	58	15	21	17	78	189	11	200	2.7778	1.73614
	%	29	7.5	10.5	8.5	39	94.5	5.5	100		
Provision of incentives to the best community members in fighting deforestation	Freq.	71	18	16	9	75	189	11	200	3.0053	1.80277
	%	35.5	9	8	4.5	37.5	94.5	5.5	100		

Table 1b)Community Conservation Practices for the People living adjacent to KFNP.
Source: Field 2018

the forest are 2.6032 and 1.58322, respectively. Of the respondents, 21% believe that controlled firewood collection from the forest constitutes the optimal alternative for conserving Kibale forest national park. 8% consider it a superior option, 13.5% perceive it as a good option, 16.5% judge it as a fair option, 35.5% regard it as an unsatisfactory option, and 5.5% did not express any opinion on the matter. Based on the findings, it can be concluded that using controlled firewood collection from the forest is not the most effective option for conserving Kibale forest national park in South Western Uganda.(Table 1a)

The findings also reveal that the mean and standard deviation values are 3.0749 and 1.57082. 27.5% of the respondents advocate for the use of energy-saving technologies in communities as the best option to conserve Kibale forest national park, 13% perceive it as a superior option, 15% regard it as a good option, 15% consider it a fair option, 23% regard it as an unsatisfactory option, and 6.5% did not express any opinion on the matter. Based on the results, it indicates that the use of energy-saving technologies in communities adjacent to the forest is the best option to conserve Kibale forest national park in South Western Uganda. Additionally, results demonstrate that the mean and standard deviation values are 2.8717 and 1.72415, respectively. It was found that 31% of the respondents believe that avoiding setting fires near or inside the forest is the optimal approach to conserving Kibale forest national park. While 6% perceive it as a superior option, 10.5% consider it a good option, 12% judge it as a fair option, 34% regard it as an unsatisfactory option, and 6.5% did not express any opinion on the matter. Based on the findings, it can be inferred that avoiding setting fires near or inside the forest may not be the best option to conserve Kibale forest national park in South Western Uganda.(Table 1a)

Furthermore, the results indicate that the Mean and Std deviation are 3.2077 and 1.70988, respectively. Among the respondents, 35.5% believe that reforestation inside the forest is the best option to conserve Kibale forest national park, while 10.5% believe it to be a better option, 10.5% con-

sider it a good option, 7.5% regard it as a fair option, 27.5% view it as a poor option, and 8.5% did not express any opinion on the matter. Based on the results, it can be concluded that reforestation inside the forest, particularly in areas affected by degradation, is the most effective approach to conserve Kibale forest national park in South Western Uganda. Furthermore, the results also demonstrate that the Mean and Std deviation values are 2.6684 and 1.70616, respectively. Among the respondents, 25.5% believe that allowing beekeeping inside the forest is the best option to conserve Kibale forest national park, while 8.5% believe it to be a better option, 9% consider it a good option, 10.5% regard it as a fair option, 40% view it as a poor option, and 6.5% did not express any opinion on the matter. Based on the results, it can be inferred that allowing beekeeping inside the forest may not be the optimal approach to conserve Kibale forest national park in South Western Uganda.(Table 1a)

Additionally, the findings reveal that the Mean and Std deviation values are 3.0585 and 1.67772, respectively. Among the respondents, 31.5% believe that tree plantation on marginal land adjacent to the forest is the best option to conserve Kibale forest national park, while 10.5% believe it to be a better option, 10% consider it a good option, 11% regard it as a fair option, 29% view it as a poor option, and 6% did not express any opinion on the matter. Based on the results, it can be concluded that tree plantation on marginal land adjacent to the forest is the most effective approach to conserving Kibale forest national park in South Western Uganda. The study demonstrates that local peoples' practices are aimed at enhancing their livelihoods and reducing illegal activities in the protected area, thereby contributing to the conservation of biodiversity.(Table 1a)

The findings reveal that the mean and standard deviation values are 3.3476 and 1.76952, respectively. Among the respondents, 44.5% indicated that providing government land to communities for tree plantation is the optimal approach for conserving Kibale Forest National Park, while 6.5% considered it a better option, 7% deemed it a good option, 8% viewed it as a fair option,

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and 27.5% regarded it as a poor option. The remaining 6.5% did not express any opinion on this matter. Based on these results, it can be inferred that providing government land to communities for tree plantation is the most effective strategy for conserving Kibale Forest National Park in Southwestern Uganda. In addition, the findings indicate that the mean and standard deviation values are 2.8503 and 1.73795, respectively. Among the respondents, 30% identified the provision of improved tree seedlings to communities as the best option for conserving Kibale Forest National Park, while 7.5% considered it a better option, 8.5% deemed it a good option, 11.5% viewed it as a fair option, and 36% regarded it as a poor option. The remaining 6.5% did not express any opinion on this matter. Based on these results, it can be concluded that providing improved tree seedlings to communities for expanding forest areas is not the most effective approach for conserving Kibale Forest National Park in Southwestern Uganda.(Table 1b)

More so, the results demonstrate that the mean and standard deviation values are 2.6862 and 1.63269, respectively. Among the respondents, 23% identified training communities on tree plantation and management as the best option for conserving Kibale Forest National Park, while 9% considered it a better option, 14% deemed it a good option, 11.5% viewed it as a fair option, and 36.5% regarded it as a poor option. The remaining 6% did not express any opinion on this matter. Based on these results, it can be concluded that training communities on tree plantation and management is not the most effective strategy for conserving Kibale Forest National Park in Southwestern Uganda. In addition, the findings of the study once again demonstrate that the Mean and Std deviation values are 3.2378 and 1.84859, respectively. Among the respondents, 45% considered paying communities for the trees planted in their marginal land as the best option for conserving Kibale forest national park, whereas 4.5% believed it to be a better option, 5% considered it a good option, 4.5% thought it to be a fair option, 33.5% regarded it as a poor option, and 7.5% did not express any opinion on this option.

Based on the results, it can be inferred that paying communities for the trees planted in their marginal land is the most effective way of conserving the Kibale forest national park in South Western Uganda. Furthermore, the Mean and Std deviation values are 2.7933 and 1.77586, respectively. In response to the same question, 28% of the respondents identified supporting community conservation and protection of the buffer zone as the best option, whereas 9.5% opined it to be a better option, 7.5% considered it a good option, 5% believed it to be a fair option, 39.5% thought it to be a poor option, and 10.5% did not express any opinion. Based on the findings, it can be concluded that supporting community conservation and protection of the buffer zone is the most effective way of conserving the Kibale forest national park in South Western Uganda.(Table 1b)

Additionally, the Mean and Std deviation values are 3.3138 and 1.77397, respectively. As per the respondents, 42.5% considered providing loans to communities to boost their businesses as the best option for conserving Kibale forest national park, whereas 9% believed it to be a better option, 8% considered it a good option, 4.5% thought it to be a fair option, 30% regarded it as a poor option, and 6% did not express any opinion. Based on the results, it can be inferred that providing loans to communities to boost their businesses is recognized as the best option for conserving Kibale forest national park in South Western Uganda. Additionally, the Mean and Std deviation values are 2.9312 and 1.75358, respectively. Among the respondents, 32.5% considered strengthening law enforcement and penalties for lawbreakers as the best option for conserving Kibale forest national park, whereas 13% regarded it as a good option, 14% thought it to be a fair option, 34.5% considered it a poor option, and 6% did not express any opinion. Based on the findings, it can be concluded that strengthening law enforcement and penalties for lawbreakers is not recognized as the most effective way of conserving the Kibale forest national park in South Western Uganda. Further analysis reveals that the values of Mean and Std deviation are 2.7647 and 1.64226, respectively. Out of the total re-

spondents, 24% expressed their opinion in favor of enacting more laws and policies to elevate KFNP conservation as the optimal choice for preserving the Kibale forest national park. Whereas 10.5% of the respondents considered it to be a better option, 13% regarded it as a good option, and 11.5% deemed it to be a fair option. However, a significant proportion of the respondents, i.e., 34.5%, believed that it was a poor option, and 6.5% did not provide any response regarding this option. Based on the obtained results, it can be inferred that creating more laws and policies to enhance KFNP conservation is not acknowledged as the best alternative to conserving Kibale forest national park in South Western Uganda.(Table 1b)

Furthermore, the study findings indicate that the Mean and Std deviation values are 2.7056 and 1.67698, correspondingly. Among the respondents, 23% advocated for the use of handcrafts to augment household income in the region as the most viable option for conserving the Kibale forest national park. Meanwhile, 10% regarded it as a better option, 12% as a good option, and 7.5% as a fair option. However, a considerable proportion of the respondents, i.e., 37.5%, perceived it as a poor option, and 10% refrained from commenting on this option. Based on the obtained results, it can be concluded that employing handcrafts to boost household income in the area is not recognized as the best choice to conserve Kibale forest national park in South Western Uganda. The results obtained indicate that the mean and standard deviation are 2.7778 and 1.73614 respectively. In terms of the conservation of Kibale forest national park in South Western Uganda, 29% of the respondents suggested that encouraging community participation in reporting illegal logging to park management is the best option. 7.5% of the respondents thought it was a better option, while 10.5% considered it a good option. 8.5% of the respondents believed it was a fair option, whereas 39% of the respondents felt that it was a poor option. Additionally, 5.5% of the respondents did not provide any input on this option. Based on the obtained results, it is evident that encouraging community participation in forest monitoring and conservation is not widely recognized as the best option for the conservation of Kibale forest national park.(Table 1b)

The standard deviation was found to be 3.0053 and 1.80277, respectively. In terms of the conservation of Kibale forest national park in South Western Uganda, 35.5% of the respondents suggested that the provision of incentives to the best community members in fighting deforestation is the best option. 9% of the respondents thought it was a better option, while 8% considered it a good option. 4.5% of the respondents believed it was a fair option, whereas 37.5% of the respondents felt that it was a poor option. Additionally, 5.5% of the respondents did not provide any input on this option. Based on the obtained results, it is evident that the provision of incentives to the best community members in fighting deforestation is recognized as the best option for the conservation of Kibale forest national park.(Table 1b)

4. DISCUSSION OF RESULTS.

As per the findings, the utilization of alternative fuel sources for cooking does not appear to be the most feasible option for the preservation of Kibale Forest National Park in South Western Uganda. These results are consistent with prior research conducted in the region, which has revealed that the inhabitants residing near protected areas tend to rely on forests for fuel wood, ultimately resulting in the degradation of the forest (Obua et al., 2010).

Furthermore, the study notes that controlled firewood collection from the forest is not the most effective option for conserving Kibale Forest National Park in South Western Uganda, as communities prefer to continue obtaining firewood from the forest. These findings are in line with previous research that indicates communities are more inclined to protect resources that benefit them and their families (Lawlor et al., 2013; Mwavu & Witkowski, 2009).

The study's results demonstrate that the use of energy-saving technologies in communities adjacent to the forest is the optimal approach to conserving Kibale Forest National Park in South Western Uganda. This finding aligns with prior

research that has identified how communities use energy technologies to protect forests and biodiversity (Grohmann et al., 2019).

Additionally, the results reveal that avoiding setting fires near or within the forest is the best option for conserving Kibale Forest National Park in South Western Uganda. This finding is also in agreement with prior research that has shown how community-owned forests are protected from forest fires by community members (Dwomoh et al., 2019).

The results of the study suggest that reforestation, particularly in areas where degradation has occurred within Kibale forest national park in South Western Uganda, is the optimal approach for conservation. This finding is in agreement with previous research which has established reforestation as a superior option for mitigating climate change and enhancing livelihoods on a global scale (Cunningham et al., 2015; P. Taylor et al., 2015).

According to the results, allowing beekeeping within the forest is not the most effective strategy for preserving Kibale forest national park in South Western Uganda. These findings align with previous studies which have demonstrated that permitting communities to utilize the forest as a habitat for their bee hives fosters conservation efforts by engendering a sense of connection to the forest (UWA, 2015). The optimal approach for conservation is to plant trees on marginal land adjacent to the forest, a conclusion that is consistent with previous research that has found reforestation to be a superior option for enhancing carbon sequestration and improving the welfare of the local populace in Kibale National Park (Chapman & Chapman, 1996).

Providing government land to communities for tree plantation is deemed the optimal approach towards preserving Kibale Forest National Park in the South Western region of Uganda. Conversely, the provision of enhanced tree seedlings to communities, coupled with the training of said communities on tree plantation and management, is not acknowledged as the most effective means of conserving Kibale Forest National Park in South Western Uganda. These findings are consistent

with previous research, which has established that empowering communities residing in proximity to forests fosters biodiversity conservation within the region. (Opige et al., 2015; Sullivan-Wiley & Short Gianotti, 2018).

The study's findings suggest that providing payment to communities for planting trees on their marginal land, supporting community conservation efforts, protecting buffer zones, and offering loans to boost local businesses is the optimal approach for conserving Kibale Forest National Park in Southwestern Uganda. These results align with previous research, which has shown that community conservation initiatives are more effective at preserving biodiversity in protected areas (Porter-Bolland et al., 2012; Shrestha et al., 2014).

In contrast, the results indicate that strengthening law enforcement and imposing penalties on violators is not the most efficient method for preserving the park. Similarly, creating additional laws and policies to augment KFNP conservation efforts is not deemed the best option based on the research's outcomes. This aligns with earlier studies that emphasized the importance of enacting and enforcing laws in forest conservation (Tumwesigye, 2018; Wong et al., 2005).

Furthermore, the findings suggest that using handcrafts to boost household income in the region is not the most effective method for conserving Kibale Forest National Park. This is consistent with previous research, which has highlighted the necessity of alternative livelihood options for promoting the conservation of protected areas (Rugerinyange et al., 2018).

The findings demonstrate that the optimal approach to conserving Kibale Forest National Park in South Western Uganda is to promote community involvement in forest monitoring and conservation. These results align with prior research indicating that community ownership and conservation are critical to protecting biodiversity in various regions (da Silva et al., 2019; Waylen & Milner-Gulland, 2016). Finally, the outcomes reveal that the distribution of incentives to the top-performing community members in the fight against deforestation is recognized as the optimal

strategy for conserving the national park. Previous studies have also highlighted the importance of community benefits through revenue sharing for biodiversity conservation in protected areas (Emmanuel, 2012; UWA, 2015).

5. CONCLUSION.

In conclusion, this study contributed to the existing literature on community participation in forest conservation in Kibale Forest National Park. The concentration should be on the use of energy-saving technologies in communities adjacent to the forest supported by 57.5%, reforestation inside the forest especially where degradation has occurred (56.5%), tree plantation on marginal land adjacent to the forest (52%), giving government land to communities for tree plantation (58%), paying communities on the trees planted in their marginal land (54.5%), provision of loans to communities to boost their businesses (57.5%), encouraging community participation in forest monitoring and conservation (65%), provision of incentives to the best community members in fighting deforestation (52.5%).

6. RECOMMENDATIONS.

The study recommends the involvement of local communities in planning, identification of wrongdoers, and management of KFNP would strengthen the conservation of the protected area thus promoting biodiversity conservation.

7. AUTHOR CONTRIBUTIONS.

Milton Nuwabimpa:-Lead Researcher collected and analyzed data and drafted the manuscript

Wycliffe Tumwesigye: - Conception of the research idea, collected data, and edited manuscript

Doreen Atwongyeire: Collected data and revised the manuscript

8. Funding.

9. Conflict of Interest.

Authors declare no conflict of interest.

10. Publisher details:

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