

The Role of Community Participation in Reforestation Programs: A Case Study of Nakasongola District

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Abstract

This study explores the status of reforestation programs in Nakasongola District, the role of community participation in their implementation, and the challenges hindering effective engagement. Utilizing a descriptive research design with quantitative and qualitative approaches, data were collected from 328 respondents through structured questionnaires and semi-structured interviews. The data were analyzed using Excel for data cleaning and SPSS for advanced statistical analysis, including chi-square tests to identify significant associations. The findings reveal that reforestation efforts in Nakasongola are driven by mechanisms such as the provision of seedlings by government and non-governmental organizations, periodic tree planting, land allocation, and the establishment of tree schemes. Community participation plays a pivotal role in planning, planting, and monitoring activities, with a significant association observed between community involvement and program effectiveness. However, challenges such as financial constraints, limited information, low community awareness, and restricted access to reforestation schemes undermine the sustainability of these programs. This study highlights the need for a robust policy framework to strengthen institutional capacity, enhance resource allocation, and empower communities through inclusive, data-driven strategies. The findings provide a replicable model for evaluating and improving reforestation efforts in other regions facing similar environmental challenges, promoting sustainable forest management and community-led conservation initiatives.

Keywords

Reforestation Programs, Community Participation, Nakasongola District,

1. Introduction

Reforestation is a vital environmental strategy aimed at mitigating climate change and restoring degraded ecosystems. It is a process of planting trees in areas where forests have been depleted, either through natural or anthropogenic activities. Reforestation is recognized as a means to sequester carbon dioxide from the atmosphere, improve biodiversity, prevent soil erosion, and enhance water conservation (Masson-Delmotte et al., 2018; Domke et al., 2020). The significance of reforestation is globally acknowledged, with initiatives such as the World Economic Forum's One Trillion Trees Initiative, the Bonn Challenge, and the United Nations Decade on Ecosystem Restoration emphasizing the need for large-scale reforestation efforts (Holl & Brancalion, 2020; Aronson et al., 2020).

Globally, reforestation has been recognized as a cornerstone of climate change mitigation strategies, leading to the establishment of several high-profile initiatives like the Bonn Challenge, which aims to restore 350 million hectares of deforested and degraded land by 2030, and the World Economic Forum's One Trillion Trees Initiative, which seeks to plant one trillion trees worldwide (Aronson et al., 2020; Holl & Brancalion, 2020). Reforestation efforts have been influenced by various socio-economic, political, and environmental factors. For instance, in the Congo Basin, reforestation programs are critical for addressing biodiversity loss, supporting the livelihoods of indigenous communities, and mitigating climate change by enhancing carbon sinks (Funk et al., 2022; Tshibamba et al., 2021).

Reforestation is a promising opportunity to capture carbon dioxide while providing key ecosystem services including clean air and water (Domke et al., 2020). the United Nations Decade on Ecosystem Restoration (Aronson et al., 2020), and the recently-formed United States One Trillion Trees Interagency Council. Reforestation could sequester an average of 6 metric tons of CO₂ per hectare (5355 pounds per acre) per year (Cook-Patton et al., 2020), but a full accounting of the climate mitigation benefits should also include other impacts (e.g., life cycle emissions, albedo, evapotranspiration). Community participation has emerged as a critical factor in the success of reforestation programs. Engaging local communities in reforestation efforts ensures the sustainability and effectiveness of these programs by leveraging local knowledge, labor, and commitment (IUCN, 2018). However, in developing countries, including Uganda, the integration of community involvement in forest management policies has been inconsistent. Despite the benefits of community participation in environmental management, challenges such as limited financial support, inadequate information on reforestation, and restricted access to reforestation schemes persist (Ahmed & Elnasikh, 2018; Mukadasi, 2010).

Uganda, like many other African countries, faces significant deforestation and

forest degradation issues. Uganda has experienced significant forest cover loss over time. Forests outside protected areas declined dramatically from 3.32 million hectares to 0.66 million hectares, representing an 80% reduction. Meanwhile, within protected areas, forest cover decreased from 1.53 million hectares to 1.07 million hectares, a 30% decline. These alarming losses were highlighted through inventories conducted in 2015 (World Bank, 2015; GoU, 2017). Nakasongola District, located in the central region of Uganda, exemplifies the challenges faced in reforestation and forest management. The district has seen considerable deforestation due to charcoal production, overgrazing, and subsistence farming, necessitating concerted efforts in reforestation and sustainable forest management (Turyahabwe & Banana, 2018).

In response to these challenges, various reforestation initiatives have been implemented in Nakasongola District. These include the provision of seedlings by the government and non-governmental organizations (NGOs), establishment of tree schemes, and periodic tree planting efforts (National Forestry Authority, 2016). Before providing seeds to communities, both the government and NGOs engage in preparatory activities to ensure effective implementation and sustainability of reforestation programs. These activities typically include training and sensitization initiatives aimed at equipping communities with the necessary knowledge and skills. The government of Uganda has promoted community-based forestry management approaches such as Collaborative Forest Management (CFM) and Community Forests (CFs), which aim to involve local communities in the conservation and sustainable management of forest resources (EMPAFORM, 2008; Gombya-Ssembajjwe & Banana, 2010).

Community participation is a cornerstone of successful reforestation programs. Participation refers to the active involvement of stakeholders in planning, implementing, and monitoring activities to achieve shared goals (IUCN, 2018). Arnstein's "Ladder of Citizen Participation" emphasizes the importance of progressing from tokenism to active engagement, where communities exercise decision-making power (Arnstein, 1969). Effective participation fosters local ownership, enhances resource management, and improves program sustainability (Mukadasi, 2010; Ahmed & Elnasikh, 2018).

In Uganda, participatory approaches such as Collaborative Forest Management (CFM) and Community Forests (CFs) aim to engage Forest Adjacent Communities (FACs) in conservation efforts. However, challenges such as limited financial resources, low awareness levels, and restricted access to information often undermine these initiatives (Gombya-Ssembajjwe & Banana, 2010; GoU, 2017). These barriers highlight the need for tailored capacity-building and incentive mechanisms to increase community involvement.

Stakeholders play pivotal roles in reforestation, contributing resources, expertise, and labor. Key stakeholders in Uganda include government agencies such as the National Forestry Authority (NFA), local governments, non-governmental organizations (NGOs), private landowners, and community groups. Each stakeholder's

involvement is critical to ensuring the program's success (FAO, 2019).

This article aims to assess the current status of reforestation programs in Nakasongola District, evaluate the contribution of community participation to these programs, and identify the challenges faced in community involvement. By understanding these dynamics, the study seeks to provide insights into effective strategies for enhancing reforestation efforts in Uganda.

2. Methods and Materials

A descriptive research design combining quantitative and qualitative approaches was used to assess the status of reforestation programs and community participation in Nakasongola. Quantitative data were collected to quantify participation impacts, while qualitative data provided in-depth stakeholder perspectives.

Uganda, located in East Africa, is a landlocked country known for its diverse ecosystems, ranging from tropical rainforests to savannahs and wetlands. Despite its rich natural heritage, Uganda faces significant environmental challenges, including deforestation and the adverse effects of climate change. Over the past decades, the country has experienced a drastic decline in forest cover, with natural forests outside protected areas shrinking by 80%, from 3.32 million hectares to 0.66 million hectares, between 1990 and 2015. Forests within protected areas also decreased by 30%, from 1.53 million hectares to 1.07 million hectares (World Bank, 2015).

Uganda's climate is characterized as tropical, with two rainy seasons and a relatively stable temperature range. However, regions such as Nakasongola, situated in the country's "cattle corridor," face semi-arid conditions with frequent droughts. Rainfall in Nakasongola averages between 600 to 1000 mm annually, but erratic weather patterns exacerbate soil erosion, reduce agricultural productivity, and increase the vulnerability of ecosystems (GoU, 2017).

The study was conducted in Nakasongola District, Uganda, characterized by a dry sub-humid climate, subsistence agriculture, and significant environmental degradation due to deforestation. The district spans 3737.6 km² and has a population of about 181,863 people. The target population included approximately 30,000 individuals involved in reforestation efforts. A sample of 394 respondents was selected using a multi-stage sampling technique, including purposive, convenience, and simple random sampling to ensure representativeness.

$$n = \frac{N}{1 + N\alpha^2}$$

where; n = the sample size.

N = total population of respondents, that is 30,000.

α = the level of significance, that is 0.05

$$n = \frac{N}{1 + N\alpha^2}$$

$$n = \frac{30,000}{1 + 30,000(0.05)}$$

$$n = \frac{30,000}{1 + 30,000 * 0.0025}$$

n = 394 Respondents.

The study was conducted in Nakasongola District, characterized by a dry sub-humid climate and significant environmental degradation (see **Figure 1** for the study area map).

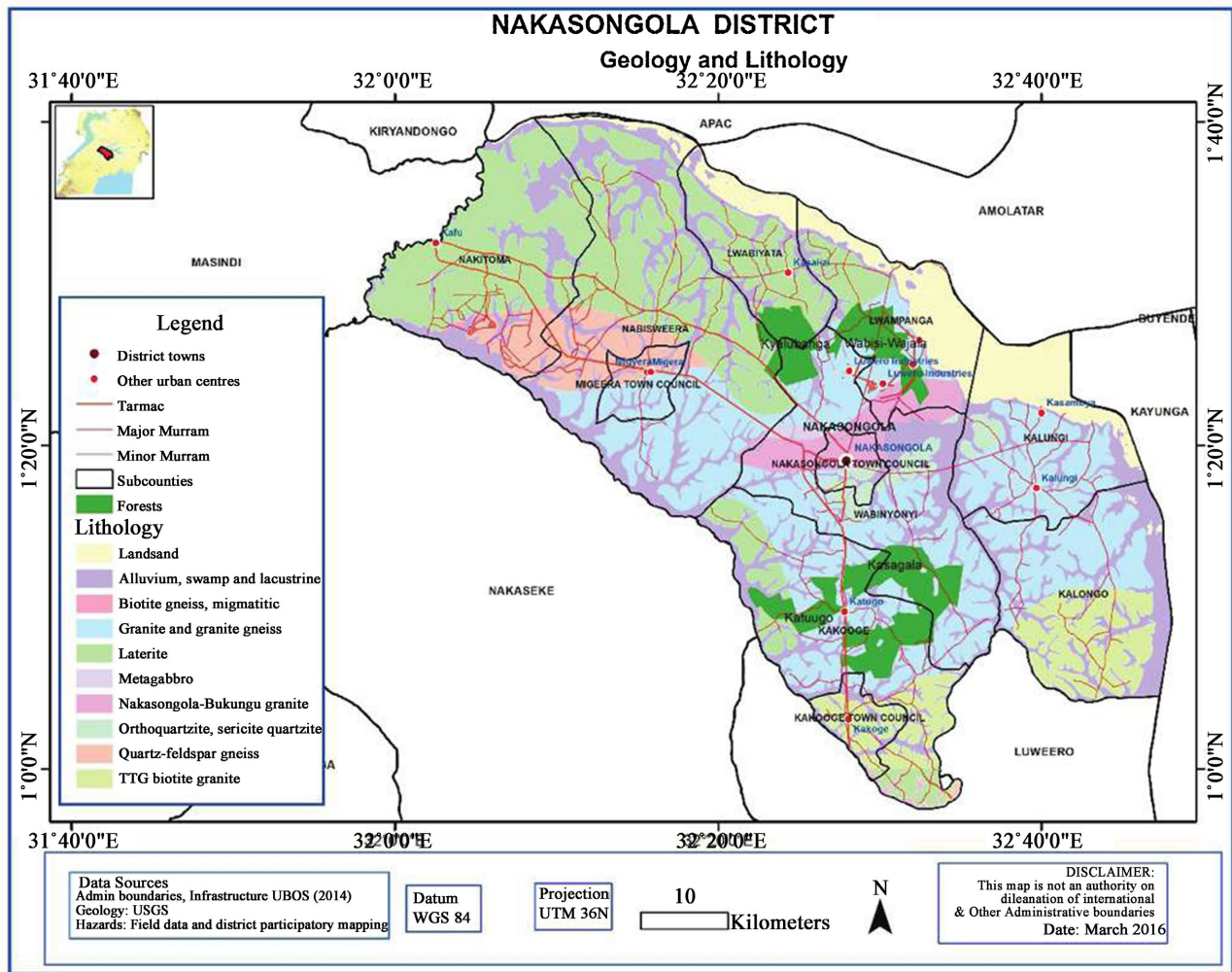


Figure 1. Study area map.

Table 1. Response rate.

Respondents Category	Sample Size	Actual returned	Percentage
Questionnaire	384	328	85.4%
Interview	10	10	100%

The response rate for the survey was high, with 85.4% of the targeted respondents completing the questionnaire, as shown in **Table 1**.

The above table presents the response rate of the responses to which the

research instruments were administered. The findings presented show that out of 384 respondents targeted 328 responded giving a response rate of 85.4%. This implies that the response rate was high.

Primary data were collected using structured questionnaires for 384 respondents and semi-structured interviews with 10 key informants. The questionnaires captured demographic, program status, and participation data, while interviews provided qualitative insights on challenges and opportunities.

Quantitative data were analyzed using SPSS for descriptive and inferential statistics, including chi-square tests. Qualitative data were analyzed thematically.

3. Results and Discussion

The demographic characteristics of the respondents, including gender distribution, age, education level, and duration of residence in Nakasongola, are summarized in **Table 2**.

Table 2. Demographic characteristics of Respondents

Demographic Characteristic	Category	Percent
Gender	Male	63.4%
	Female	36.6%
Age	20 - 29	21.3%
	30 - 39	34.8%
	40 - 49	29.6%
	50 - 59	14.3%
Time of stay in Nakasongola	1 - 3 years	1.5%
	4 - 6 years	1.8%
	7 - 10 years	12.2%
	11 years and above	84.5%
Education Level	Secondary	51.5%
	Certificate & Diploma	24.4%
	Degree	12.2%
	Postgraduate	11.9%

The demographic data indicates that the majority of the respondents are male (63.4%), while females constitute 36.6% of the sample. In terms of age distribution, a significant proportion of respondents fall within the 30 - 39 age bracket (34.8%), followed by those aged 40 - 49 (29.6%), 20 - 29 (21.3%), and 50 - 59 (14.3%). Regarding the duration of residence in Nakasongola, a substantial majority have lived in the district for over 11 years (84.5%), with smaller proportions residing for 7 - 10 years (12.2%), 4 - 6 years (1.8%), and 1 - 3 years (1.5%).

The educational background of the respondents varies, with the largest group having attained secondary education (51.5%), followed by those with a Certificate & Diploma (24.4%), a Bachelor's degree (12.2%), and a Postgraduate qualification (11.9%).

This maps illustrates significant land cover and land use changes in Nakasongola District between 1987 and 2005, reflecting complex interactions between socio-economic demands and environmental degradation. Notably, there is a substantial reduction in bushland (light green) and woodland (dark green), which suggests widespread deforestation driven by human activities such as charcoal production, overgrazing, and agricultural expansion.

The land cover and land use changes between 1987 and 2005 indicate a substantial reduction in bushland and woodland due to human activities such as charcoal production and agricultural expansion (see **Figure 2**),

Extent of land cover and land use changes

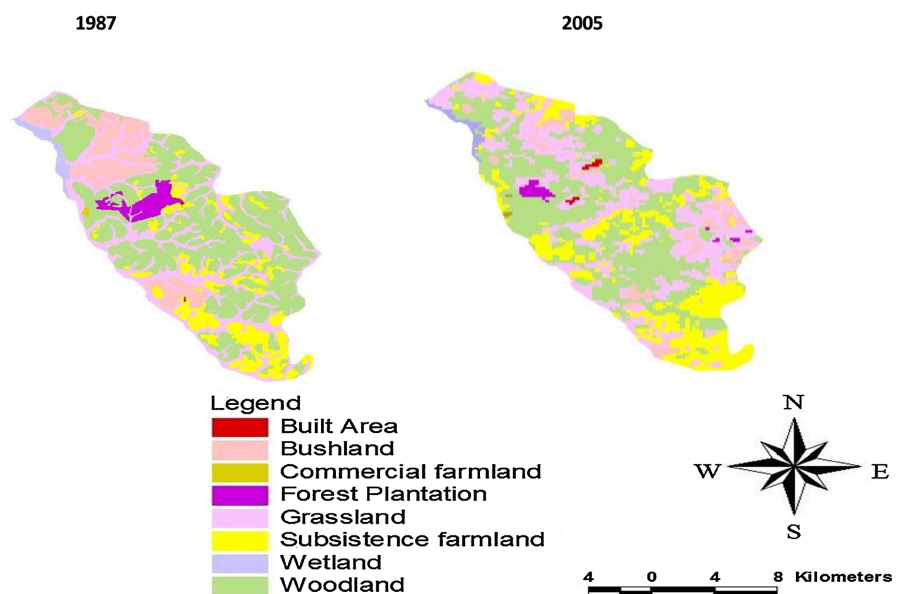


Figure 2. Land cover and land use change for Nakasongola District between 1987 and 2005. Source: ArcMap 10.1 Landsat Images for 1987 and 2005.

The expansion of subsistence farmland (bright green) highlights growing population pressure and increased reliance on small-scale farming to sustain livelihoods. Similarly, the growth of commercial farmland (yellow) indicates a shift toward market-oriented agricultural practices, likely influenced by economic opportunities and national policies promoting agricultural productivity.

While forest plantations (purple) show a noticeable increase, representing deliberate reforestation and afforestation efforts, this growth appears insufficient to offset the large-scale loss of natural vegetation. Wetlands (dark blue) remain relatively stable over the observed period, reflecting the resilience of these ecosystems or possibly limited human encroachment due to their ecological characteristics.

However, the overall decline in natural vegetation raises concerns about biodiversity loss, soil erosion, and reduced ecosystem services, which are further exacerbated by the district's semi-arid climate.

Status of reforestation programs in Nakasongola district.

The study findings reveal that the reforestation programs were poorly implemented (53% of the respondents), while 47% of the respondents contend that implementation was good. The findings indicate that even though the reforestation Programs existing in Nakasongola is not very well established. Because of limited community engagement, inadequate resources, and weak institutional capacity. The results indicate that reforestation efforts in Nakasongola district are supported through various mechanisms. The government provides seedlings to the community (29.9% of respondents), conducts periodic tree planting (25.6%), allocates land for tree planting (23.2%), establishes tree schemes (11.3%), and NGOs also contribute by providing seedlings for reforestation (10.1%). These mechanisms are crucial for supporting the reforestation programs in the district.

The effectiveness of reforestation programs varies, with some respondents rating them as poorly implemented (see **Figure 3** for an overview of reforestation program status).

Reforestation in Nakasongola is supported through various mechanisms such as government and NGO seedling distribution, land allocation, and tree planting, as shown in **Table 3**.

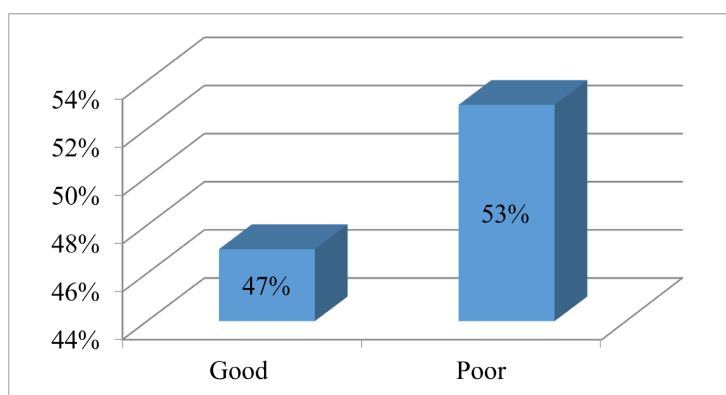


Figure 3. State of reforestation Programs.

Table 3. How is reforestation done in Nakasongola District?

Responses	Frequency	Percent
There is periodic planting of trees	84	25.6
Government provides seedlings to the community	98	29.9
NGOs provide seedlings for reforestation	33	10.1
There is land provided for planting trees	76	23.2
Government has established tree schemes	37	11.3
Total	328	100.0

In a Key Informant Interview (KII) with the Environmental Officer of Nakasongola district, it was noted that the government has provided land and seedlings, along with other necessary support, to promote reforestation, particularly in areas that have experienced severe deforestation. However, the officer highlighted that while these initiatives are in place, there are still gaps in conservation and reforestation efforts that need to be addressed to enhance the district's reforestation and forest development.

Contribution of community participation in the implementation of reforestation programs in Nakasongola district

The findings reveal that 64% of the respondents contend that community contribute to implementation of reforestation programs in Nakasongola, while 36% respondents doesn't contribute reforestation programs. The findings show that the majority respondents for the study agree that the community is partially involved in the reforestation programs in Nakasongola district.

The data reveals varying levels of community participation in reforestation programs. Most respondents perceive participation as consultative (30.5%) or collaborative through partnerships (24.4%), indicating moderate engagement. However, only 8.5% experience citizen control, reflecting limited empowerment. Tokenistic forms of participation, including informing (21.3%) and manipulation (15.2%), are still prevalent, showing that substantial progress is needed to achieve meaningful and sustainable community involvement. Efforts should focus on transitioning from symbolic engagement to more empowered roles for communities.

The level of community involvement in reforestation initiatives varies significantly, with a majority indicating moderate participation, as seen in **Figure 4**.

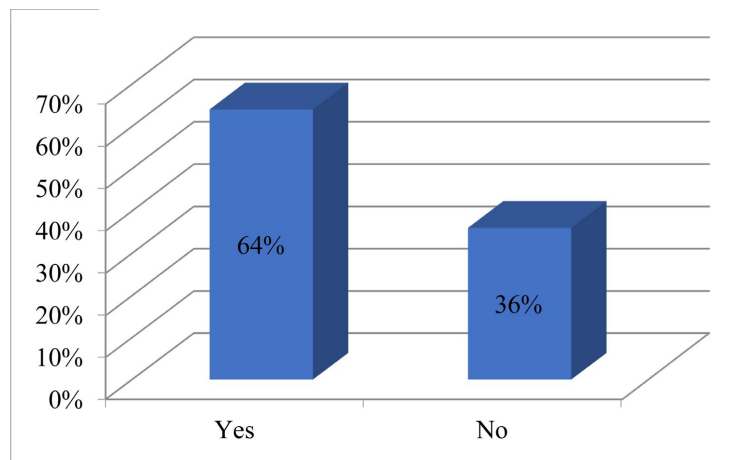


Figure 4. Whether community contributes to implementation of reforestation programs in Nakasongola.

The level of community participation in reforestation efforts varies from minimal involvement to active decision-making, as illustrated in **Table 4**.

Contribution of community participation in the implementation of reforestation programs in Nakasongola district

Table 4. On a scale of 1 to 5, how would you rate the level of community participation in the reforestation programs in Nakasongola District.

No	Indicator	Frequency	Percentage
1.	Manipulation	50	15.2
2.	Informing	70	21.3
3.	Consultation	100	30.5
4.	Partnership	80	24.4
5.	Citizen control	28	8.5

In a Key Informant Interview (KII) with the Environmental Officer of Nakasongola district “On the contribution of community participation in the implementation of reforestation programs in Nakasongola district, the study revealed that community participate in reforestation through allocation of land for specifically tree planting, there has been community involvement in the generation of seeds on the nursery beds, although to a small extent the community members also monitor and personally are undertaking the reforestation programs”.

The above table shows that challenges faced by community involvement in reforestation programs in Nakasongola district revealed that Lack of financial support had 38.7% of the study, Limited information on reforestation had 30.8%, Lack of accessibility to the reforestation schemes had 24.7% of the respondents and low level of community awareness on reforestation had 5.8%. The findings of the study revealed that the community is faced with a series of hindrances that have possibly reduced prevalence of high reforestation programs in Nakasongola district.

Financial constraints, limited access to information, and low community awareness are among the main barriers to reforestation efforts, as indicated in **Table 5**.

Table 5. Challenges in reforestation programs in Nakasongola district challenges faced by community involvement in reforestation programs in Nakasongola district.

Responses	Frequency	Percent
Lack of financial support	127	38.7
Limited information on reforestation	101	30.8
Low level of community awareness on reforestation	19	5.8
Lack of accessibility to the reforestation schemes	81	24.7
Total	328	100.0

Asked through interviews, the officer revealed that there are challenges of community involvement in reforestation programs in Nakasongola district. The community complains of small pieces of land, therefore integrating it with reforestation becomes a very hard issue. There have been cases of limited financing needed to care take the management of the forests in the communities.

Government efforts in reforestation face issues such as limited funding, lack of coordination, and low community mobilization, as summarized in **Table 6**.

Table 6. Challenges faced by government in implementing the community reforestation programs in Nakasongola district.

Responses	Frequency	Percent
Lack of focus by government	73	22.3
Limited funding by government	69	21.0
Lack of appropriate coordination	71	21.6
Low level of community mobilization	115	35.1
Total	328	100.0

Source: Primary data, 2021.

Results in the above table show the challenges faced by government in implementing the community reforestation programs in Nakasongola district. The findings reveal that Low level of community mobilization had 35.1% of the respondents, Lack of appropriate coordination had 21.6% of the study, limited funding by government had 21% respondents and Lack of focus by government had 22.3% of the study. The findings revealed that there are serious challenges hindering the government in reforestation programs in Nakasongola district. It's pivotal to contend that the state of the government is under low in the implementation of the community reforestation programs.

Asked on the challenges faced by government in the management of the community forests and reforestation programs, the officer revealed that the government is sufficiently involved in the management and handling of the reforestation Programs. The government is further faced with controls and supervision of the individual reforestation efforts since some people end up not planting the trees provided for them. **KII with Environmental office, Nakasongola district.**

The effectiveness of reforestation programs is significantly associated with community participation, as evidenced by the statistical analysis in **Table 7.**

Table 7. Association between state of reforestation programs and contribution of community participation in the reforestation programs in Nakasongola District.

Construct	State of reforestation programs				Chi-square	
	Very Good	Good	Poor	Very Poor		
Community participates in planning the reforestation programs	98 (29.9%)	74 (22.6%)	92 (28%)	64 (19.5%)	17.301	
Contribution of community participation in the implementation of reforestation programs	There is community participation in actual planting of trees	62 (18.9%)	48 (14.6%)	105 (32.0%)	113 (34.5%)	12.628
	The community is involved in the coordination activities for tree planting	68 (20.7%)	117 (35.7%)	71 (21.6%)	72 (22.0%)	10.543
	There is community involvement in monitoring the reforestation program	95 (29.0%)	93 (28.4%)	64 (19.5%)	76 (23.2%)	9.234

Association between state of reforestation programs and contribution of community participation in the reforestation programs in Nakasongola District			
Does community contribute to implementation of reforestation programs	Yes	216 (65.9%)	
	No	46 (14.0%)	12.628*
	Not Sure	66 (20.1%)	
Does the district support you in the implementation of reforestation programs	Yes	133 (40.5%)	
	No	129 (39.3%)	22.590**
	Not Sure	66 (20.1%)	

* $p < 0.05$, ** $p < 0.001$.

The data highlights a significant association between the state of reforestation programs and community participation in Nakasongola District. Community involvement varies across activities: 29.9% of respondent's report participation in planning, 18.9% in planting, 20.7% in coordination, and 29.0% in monitoring, with chi-square values indicating statistically significant links ($p < 0.05$) between these activities and the effectiveness of reforestation programs. Overall, 65.9% of respondents affirm community contributions, while district support plays a pivotal role, as programs with district backing (40.5%) are more effective ($\chi^2 = 22.590$, $p < 0.001$). However, notable gaps remain, with 14.0% denying and 20.1% unsure about community contributions, emphasizing the need for stronger engagement and clearer district involvement.

4. Discussion

This study highlights the significant role of community participation in the success of reforestation programs, aligning with findings from other African contexts. In Nakasongola District, community involvement is evident across various stages of reforestation, including planning, planting, and monitoring. These findings are consistent with broader literature that underscores the necessity of local engagement in environmental restoration efforts to ensure sustainability and effectiveness. For instance, studies from regions like the Congo Basin emphasize the value of empowering local communities to take active roles in reforestation initiatives, resulting in enhanced biodiversity conservation and climate mitigation outcomes (Tshibamba et al., 2021; Funk et al., 2022).

The research also reveals challenges in achieving meaningful community participation, including limited financial resources, inadequate access to information, and weak institutional frameworks. Similar barriers have been observed in other African countries, where constraints such as insufficient funding, lack of training, and weak coordination mechanisms have hampered the implementation of community-driven reforestation programs. For example, Uganda's participatory forest management models demonstrate that addressing these challenges through stronger stakeholder collaboration enhances outcomes significantly (Gombya-Ssembajjwe & Banana, 2010; Turyahabwe & Banana, 2018).

Similarly, the current study's findings that both community participation and district support are crucial for the perceived effectiveness of reforestation programs are consistent with those of [Turyahabwe & Banana \(2018\)](#) and [Gombya-Ssembajjwe & Banana \(2010\)](#). These researchers noted that in regions where deforestation is driven by socio-economic factors, involving local communities and providing institutional support are essential strategies for overcoming challenges and improving reforestation outcomes. This mirrors the situation in Nakasongola District, where community involvement, coupled with government and NGO support, plays a pivotal role in the success of reforestation efforts, highlighting the need for collaborative approaches to enhance forest management and ecosystem restoration.

Future outlook and challenges

Reforestation programs' success relies on strong community engagement and supportive policies. Studies show that providing resources and involving communities in all stages from planning to monitoring enhances sustainability. Effective programs incorporate education, capacity-building, and financial incentives, aligning with best practices in similar contexts facing deforestation.

Nakasongola's reforestation efforts are challenged by low awareness, restricted access, and poor coordination. These issues hinder community participation and program sustainability. Addressing them requires better resource management, education, and improved stakeholder coordination.

5. Conclusion

The objectives of this study were to determine the status of reforestation programs in Nakasongola District, evaluate the contribution of community participation in the implementation of these programs, and identify the challenges faced by communities in their involvement in reforestation efforts. The study revealed that reforestation in Nakasongola is supported through several mechanisms, including the provision of seedlings to the community by the government, periodic tree planting initiatives, allocation of land for tree planting, establishment of government-led tree schemes, and support from non-governmental organizations (NGOs) in the form of seedlings.

The findings indicated a significant association between the state of reforestation in the district and community contributions to the implementation of these programs, suggesting that the effectiveness of reforestation efforts is closely linked to the level of community involvement. Communities play a crucial role in these efforts through activities such as actual tree planting and ongoing monitoring of reforestation programs.

Although, the study also identified several challenges that limit effective community participation. These challenges include a lack of financial support, limited access to information on reforestation, difficulties in accessing reforestation schemes, and a low level of community awareness. These barriers hinder the community's ability to fully engage in and support the reforestation initiatives in Nakasongola. Addressing these challenges is essential for enhancing community involvement

and achieving sustainable reforestation outcomes in the district.

6. Recommendations

- Develop and enforce a policy framework that compels reforestation efforts by communities and individuals in Nakasongola, particularly targeting those planning to cut trees. Ensure community involvement is incorporated into the reforestation policy framework.
- Deploy necessary resources to support the implementation of reforestation programs, including providing sufficient seedlings, irrigation, and protection of tree plants from pests and diseases.
- Develop a forest management plan that involves community members at every stage and gives them a key role in forest management to ensure a better understanding and ownership of the process.
- Strengthen the capacity of the government at national, regional, and local levels to design, implement, and enforce policies on forest reserves, ensuring that each level is provided with the appropriate responsibilities and resources.
- The National Forestry Authority (NFA) should promote lesser-known tree species to communities, highlighting their potential for commercial exploitation.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- Ahmed, A., & Elnasikh, M. (2018). Community Participation in Environmental Management: Challenges and Opportunities. *Environmental Management Journal*, 7, 122-134.
- Aronson, J., Brancalion, P. H. S., Durigan, G., & Rodrigues, R. R. (2020). What Role Should Government Regulation Play in Ecological Restoration? *Nature Ecology & Evolution*, 4, 163-166.
- Arnstein, S. R. (1969). *A Ladder of Citizen Participation*. *Journal of the American Institute of Planners*, 35, 216-224. <https://doi.org/10.1080/01944366908977225>
- Cook-Patton, S. C., Drever, C. R., Griscom, B. W., Hamrick, K., & Anderson, C. M. (2020). Protecting and Restoring Natural Forests Are Key to Meeting Climate Goals. *Global Change Biology*, 26, 282-292.
- Domke, G. M., Perry, C. H., Walters, B. F., & Woodall, C. W. (2020). Estimating Biomass and Assessing Carbon Stock and Change in Forests: A Critical Perspective. *Forest Ecosystems*, 7, 47.
- EMPAFORM (2008). *Collaborative Forest Management Guidelines: Lessons from Uganda's Experience*. Environmental Management for Poverty Alleviation and Reform (EMPAFORM).
- FAO (2019). *Community-Based Forest Management in Africa: Guidelines for Implementation*. Food and Agriculture Organization of the United Nations.
- Funk, S. M., Fa, J. E., & Olivero, J. (2022). Forests of the Congo Basin: A Key to Climate and Biodiversity. *Nature Sustainability*, 5, 241-249.
- Gombya-Ssembajjwe, W., & Banana, A. Y. (2010). Community Forests and Forest Management in Uganda: The Way Forward. *Forest Policy and Economics*, 12, 259-265.

- Government of Uganda (GoU) (2017). *State of Uganda's Forests*. Ministry of Water and Environment.
- Holl, K. D., & Brancalion, P. H. S. (2020). Tree Planting Is Not a Simple Solution. *Science*, *368*, 580-581. <https://doi.org/10.1126/science.aba8232>
- IUCN (2018). *The Role of Community Participation in Forest Restoration: Guidelines for Forest Managers*. International Union for Conservation of Nature.
- Masson-Delmotte, V., Zhai, P., Pörtner, H. O., Roberts, D., Skea, J., Shukla, P. R. et al. (2018). *Global Warming of 1.5°C*. An IPCC Special Report on the Impacts of Global Warming of 1.5°C Above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, Intergovernmental Panel on Climate Change.
- Mukadasi, B. (2010). Socio-Economic Aspects of Forest Management in Uganda. *African Journal of Ecology*, *48*, 973-980.
- National Forestry Authority (2016). *Guidelines for Implementing Forest Management Plans in Uganda*. National Forestry Authority.
- Tshibamba, J. M., Molua, E. L., & Fonjong, L. N. (2021). Reforestation as a Strategy for Climate Mitigation in the Congo Basin. *Climate Policy*, *21*, 642-657.
- Turyahabwe, N., & Banana, A. Y. (2018). Challenges of Participatory Forest Management in Uganda. *Forest Policy and Economics*, *90*, 12-18.
- World Bank (2015). *Uganda: Forest Landscape Restoration Opportunity Assessment Report*.