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ISSN 2520-7504 (Online) Vol.9, Iss.2, 2025 (pp. 903 - 915)

Influence of Stakeholders' Engagement on Project Performance of the Green Gicumbi Project

Fidele Kwizera University of Kigali, Rwanda Email: <u>Kwizera.fidele@yahoo.fr</u>

Abstract: This study examined how stakeholder engagement affects project performance, focusing on Rwanda's Green Gicumbi Project. Guided by stakeholder theory, it evaluated the impact of stakeholder involvement in planning, decision-making, and implementation phases. Using a mixed-methods approach, the study gathered data from 150 respondents, including project managers, team members, and local officials. Data analysis involved descriptive statistics, regression, and ANOVA. Findings showed that engagement in decision-making (mean = 3.675) and implementation (mean = 3.662) significantly improved project performance. Planning engagement (mean = 3.723) also had a positive, though slightly weaker, effect. Regression analysis revealed a strong positive correlation (R = 0.702) between stakeholder engagement and project performance, explaining 49.3% of the variance ($R^2 = 0.493$). The Durbin-Watson statistic (0.085) indicated positive autocorrelation. ANOVA results (F = 143.807, p = 0.000) confirmed the significant influence of stakeholder engagement. The study concludes that stakeholder engagement is essential for project success. It recommends prioritizing stakeholder involvement in all phases, improving decision-making, and integrating feedback into planning. Policymakers should promote supportive environments through training, incentives, and continuous engagement. These findings provide key insights for enhancing project outcomes through strategic stakeholder management.

Keywords: Stakeholder engagement, Project performance, Planning, Decision-making, Implementation, Project management.

How to cite this work (APA):

Kwizera, F. (2025). Influence of Stakeholders' Engagement on Project Performance of the Green Gicumbi Project. *Journal of Research Innovation and Implications in Education*, 9(2), 903–915. <u>https://doi.org/10.59765/vht83pw</u>.

1. Introduction

Climate change poses a significant threat to global ecosystems and human livelihoods. The Intergovernmental Panel on Climate Change (IPCC) has highlighted that developing countries, particularly those with high sensitivity and low adaptive capacity, face severe risks from climate change. Extreme weather events such as floods, droughts, and landslides have become more frequent and intense, leading to widespread loss of lives, economic setbacks, and environmental degradation (FAO, 2019).

In Africa, the impacts of climate change are particularly severe due to the continent's economic dependence on agriculture, limited infrastructure, and inadequate access to technology and information These factors contribute to the heightened vulnerability of African countries to climaterelated hazards. Development projects in Africa have often faced challenges related to stakeholder management, as the diverse interests and needs of stakeholders can significantly influence project outcomes. Recognizing and managing these stakeholders is crucial for improving the success of development initiatives in the region. (IPCC, 2019).

East Africa is one of the regions most affected by climate change, with frequent and severe climate-related impacts such as floods, droughts, and landslides. The region's high dependence on rain fed agriculture, coupled with its diverse and complex socio-economic landscape, makes it particularly vulnerable to these hazards. In this context, effective project management and stakeholder engagement become critical for enhancing resilience and ensuring successful outcomes of climate adaptation projects (FAO,2019).

Rwanda exemplifies the vulnerabilities faced by East African countries. Over the past decade, Rwanda has experienced increased frequency and severity of climaterelated impacts, including floods, droughts, and landslides. These events have led to significant losses in lives, crops, livestock, and infrastructure, exacerbating food insecurity and diminishing economic stability (REMA, 2019). Rwanda's dependency on rain fed agriculture, its hilly topography, and limited access to climate information further amplify its vulnerability to climate hazards (REMA, 2019).

The Northern Province's Gicumbi District is particularly susceptible to climate hazards. According to the Rwanda Climate Change Vulnerability Assessment and Index Final Report 2018, Gicumbi ranks highest in exposure to climate hazards and second highest in sensitivity to climate-related impacts. This makes Gicumbi the most vulnerable area in the country to climate change impacts. (ReMa,2018).

In response to these challenges, the Government of Rwanda, through the Ministry of Environment, secured USD 32 million from the Green Climate Fund (GCF) in 2019 for the "Strengthening Climate Resilience of Rural Communities in Northern Rwanda" project, known locally as the Green Gicumbi Project. Implemented by the National Fund for Environment with the Ministry of Environment as the accredited entity, this five-year project aims to enhance adaptive capacity and reduce exposure to climate risks in the Muvumba B sub-catchment, covering nine sectors and benefiting approximately 150,000 direct and 380,000 indirect beneficiaries (FONERWA,2019).

Given the local population's heavy reliance on agriculture, particularly tea and coffee farming, the project addresses significant challenges related to climate variability and economic losses. Effective stakeholder engagement is critical to the success of such climate adaptation projects. Understanding how stakeholder engagement influences the performance of the Green Gicumbi Project is essential for optimizing its impact and achieving the project's goals. This research was set to investigate the influence of stakeholder engagement on the performance of the Green Gicumbi Project, aiming to enhance its effectiveness and sustainability (Reed, 2020)

1.1 Statement of the Problem

Despite substantial financial investments and efforts, the Green Gicumbi Project in Rwanda has faced challenges in achieving its intended success over its initial five years of operation. The project's performance has been less than expected, and evaluations have pointed out several underlying issues. One critical issue identified is the inadequate engagement of stakeholders throughout the project's lifecycle. Stakeholder engagement is pivotal to project success, as stakeholders have a vested interest in the project's outcomes and possess the ability to influence its direction. (Salleh ,2018).

Previous research highlights various factors contributing to successful project completion, including project management competency, transparent evaluation processes, effective communication, and alignment of goals (Alen, 2019). However, the specific role of engagement influencing stakeholder in project performance has been insufficiently explored in many studies, such as those by Maina (2015), This gap is particularly pronounced in the context of the Green Gicumbi Project, where the involvement of stakeholders in planning, implementation, decision-making, and evaluation processes has been notably deficient. (Peter et al. 2019).

Referred to the financial and success reports of Green Gicumbi (2024), the project used around thirty millions United States dollars to finance its projects in Gicumbi district. However, despite the huge amount of money used, its project's success has not been very successful in its past 5years of activities and one of the reasons given by project's consultants and evaluators, is poor engagement of stakeholders specifically the stakeholders of the project whereby they have not been involved in project planning, implementation, in decision making and in evaluations. Thus, this study aims to determine the influence of stakeholder engagement on the performance of the Green Gicumbi Project. By examining this relationship, the research seeks to provide insights into how improved stakeholder engagement can enhance project effectiveness and success, contributing to more effective climate adaptation and resilience-building efforts in Rwanda. (Green Gicumbi Project, 2024).

1.2 General Objective of the Study

The general objective of this study was to investigate the influence of stakeholder engagement on project performance in Rwanda.

1.3 Research Objectives

- 1. To examine the Influence of stakeholder engagement in planning process on performance of Green Gicumbi Project
- 2. To assess the Influence of stakeholder engagement in implementation on performance of Green Gicumbi Project
- 3. To analyze the Influence of stakeholder engagement in decision making on performance of Green Gicumbi Project.

2. Literature Review

This section deals with Concepts of Study, Theories used, and empirical review of other authors related to investigating the influence of stakeholder engagement in enhancing the project performance. The chapter begins by the conceptual review and followed by theoretical review, empirical review and research conceptual framework out the gap from other authors.

2.1.1 Stakeholder' Engagement

In contemporary project management, stakeholder engagement has emerged as a pivotal component in ensuring project success. Stakeholders are broadly defined as individuals, groups, or organizations that can influence or be influenced by the outcomes of a project. Their involvement is integral to the project lifecycle, encompassing phases such as planning, execution, and decision-making. Effective stakeholder engagement entails not merely informing stakeholders but actively involving them in meaningful ways throughout the project's duration. (PMI, 2019).

It also fosters a sense of ownership and commitment among stakeholders, which can enhance their support and cooperation. This proactive involvement can lead to a more accurate understanding of project requirements and constraints, thereby facilitating more informed decisionmaking. Moreover, stakeholder engagement contributes to the overall success of a project by improving communication and transparency. When stakeholders are actively engaged, there is a greater exchange of information, which can lead to better coordination and more effective problem-solving. Engaged stakeholders are more likely to provide valuable insights and feedback, which can be used to refine project objectives and strategies.

Research supports the notion that effective stakeholder engagement is correlated with improved project performance. For instance, Gohary (2019) argues that aligning project goals with stakeholder expectations through active engagement enhances the likelihood of project success. By fostering a collaborative environment where stakeholders feel heard and valued, projects can achieve higher levels of efficiency, effectiveness, and overall success. (Gohary, 2019).

2.1.2 Project Performance

Project performance is typically measured by how well a project meets its predefined objectives within the constraints of time, budget, and quality. Key performance indicators (KPIs) often include the timeliness of project completion, adherence to budgetary constraints, and the quality of the final deliverables. Successful project performance is not just about meeting these technical criteria; it also involves achieving stakeholder satisfaction and delivering long-term benefits to the community and environment (PMI, 2019).

Rwanda is particularly vulnerable to the impacts of climate change. The country has experienced a rise in extreme weather events over the past decade, including floods, droughts, and landslides. These events have caused significant loss of life, damage to infrastructure, and reductions in agricultural productivity, which in turn exacerbate food insecurity and limit economic growth. The Northern Province, especially the Gicumbi District, is one of the most vulnerable regions in Rwanda due to its hilly terrain, reliance on rain-fed agriculture, and limited access to climate information.

In response to these challenges, the Government of Rwanda, through the Ministry of Environment, secured funding from the Green Climate Fund (GCF) to implement the "Strengthening Climate Resilience of Rural Communities in Northern Rwanda" project, commonly known as the Green Gicumbi Project. Launched in 2019, this five-year project aims to reduce vulnerability to climate change by enhancing the adaptive capacity of targeted groups and reducing their exposure to climate risks. The project focuses on nine sectors within the Muvumba B sub-catchment, targeting 150,000 direct and 380,000 indirect beneficiaries. (GCF 2019).

2.1.3 Planning Process

The planning process in project management is foundational for setting project objectives, defining scope, and developing strategies for execution. Effective stakeholder engagement during this phase is crucial for aligning the project's goals with the needs and expectations of those affected by the project. Engaging stakeholders in the planning process helps to identify potential risks, constraints, and opportunities early on, which can lead to more realistic and achievable project plans. According to research, stakeholders who are actively involved in planning are more likely to support the project and contribute valuable insights that can enhance project performance. Their input can lead to better resource allocation, clearer objectives, and a more comprehensive understanding of project requirements, ultimately improving the likelihood of project success (PMI, 2019).

2.1.4 Decision Making

Decision-making is a critical aspect of project management that involves selecting the best course of action among various alternatives. Stakeholder engagement during the decision-making process ensures that the perspectives and interests of those affected by the project are considered. This involvement can lead to more informed and balanced decisions, as stakeholders often provide unique insights and highlight potential issues that may not be apparent to the project team alone. Engaging stakeholders in decisionmaking can also foster a sense of ownership and accountability, which can enhance their commitment to the project's success. Studies have shown that projects with robust stakeholder involvement in decision-making tend to experience fewer conflicts and greater alignment between project outcomes and stakeholder expectations, leading to improved overall performance (Gohary, 2019).

2.1.5 Implementation

The implementation phase is where project plans are put into action and where stakeholder engagement remains vital. Active engagement during implementation helps to ensure that stakeholders are informed of progress, changes, and issues that arise. Regular communication and involvement of stakeholders during this phase can facilitate timely problem-solving, mitigate risks, and address concerns before they escalate. Engaged stakeholders are more likely to provide support and resources, which can contribute to smoother execution and higher project performance. Additionally, ongoing stakeholder involvement helps maintain alignment with project goals and can lead to better adaptation to any changes or challenges that occur during implementation. Research indicates that projects with continuous stakeholder engagement throughout the implementation phase generally achieve higher levels of success and satisfaction among stakeholders (PMI, 2019).

2.2. Theoretical Review

This section discusses the theoretical frameworks underpinning the study reviewed. This review elucidated the relevance of the selected theories, identifying their limitations, and discussing their utility in understanding the variables of interest in the research. The two main theories relevant to this study are Stakeholder Theory and the Theory of Performance.

2.2.1 Stakeholders' Theory

Freeman's (1984) Stakeholder Theory emphasizes the critical role of identifying and managing stakeholder relationships to achieve project success. This theoretical framework is particularly relevant to the current study of the Green Gicumbi Project, as it helps elucidate how stakeholder engagement (independent variable) influences project performance (dependent variable). The stakeholder method is recognized as a valuable approach for understanding organizational contexts (Oakley, 2011), and it broadens management's responsibilities to include the interests and claims of various non-stockholder groups, which is essential for project effectiveness (Mansuri et al., 2004).

In this study, we explored how effective stakeholder engagement aligns with project objectives, thereby influencing outcomes such as efficiency, effectiveness, and community support. Incorporating Stakeholder Theory allows for a nuanced examination of this relationship, ensuring that the diverse interests of all relevant groups are acknowledged and addressed. This alignment is expected to lead to improved project implementation and overall success, contributing to the sustainability of climate adaptation efforts in Rwanda.

2.2.2 The Theory of Performance

Don Elger pioneered the Theory of Performance (ToP) in 2007, identifying six fundamental features that serve as a framework for explaining and measuring performance. These attributes include level of knowledge, level of identification, context of performance, skill level, fixed factors, and personal characteristics. Additionally, the theory encompasses three axioms: immersion, performer's mentality, and reflective practice, which further guide performance assessment (Elger, 2007). This theory is particularly relevant to the current study as it provides a structured approach to evaluate how stakeholder attributes such as knowledge, skills, and personal characteristics impact project performance.

In the context of the Green Gicumbi Project, the ToP framework enables an analysis of how effective stakeholder engagement can enhance the knowledge and

skills of stakeholders, leading to improved project outcomes. By focusing on immersion and reflective practice, the theory illustrates how engaged stakeholders are likely to develop a deeper understanding of project goals and challenges, fostering a more collaborative environment. This collaborative engagement can enhance problem-solving capabilities and decision-making processes, directly influencing the project's success.

Moreover, by examining the personal characteristics and motivations of stakeholders, the study can identify barriers to effective engagement and potential areas for improvement. Understanding these dynamics is crucial for optimizing stakeholder involvement in the Green Gicumbi Project, ultimately contributing to enhanced performance and sustainability in climate adaptation efforts (Elger, 2007).

2.3 Empirical Review

Stakeholder engagement researchers have recently produced some excellent research work. Numerous studies have found that projects are carried out significantly contribute to the economic development of both emerging and established nations (Kimunduu et al.,2019). Despite this level of importance, studies have revealed that there is still a lack of stakeholder participation, which has led to a new area of research on the factors that affect project performance. Researchers are quite interested in the present trend regarding on the impression of education over progressiveness of project. The outcome of stakeholder engagement on project performance has been the subject of numerous research (Nyabwanga, 2021).

2.3.1 Planning process and Project Performance

Several studies have established a positive relationship between planning process and project performance for instance a study by Bryson, (2020) indicates that incorporating stakeholder input during the planning phase significantly improves project performance. Projects that engage stakeholders in planning are better aligned with actual needs and expectations, leading to increased success rates and research conducted by Olander & Landin, (2019). Indicated that community involvement in planning has been shown to enhance project relevance and effectiveness, resulting in higher satisfaction and better project outcomes (Bryson ,2020).

Research conducted by Johnson and Martinez (2022) explored the impact of iterative planning methods, such as Agile, on project performance. The study revealed that iterative and adaptive planning methods, which involve continuous feedback and adjustments, led to higher project satisfaction and better alignment with evolving client needs. (Martinez 2022)

Empirical studies show that stakeholder engagement during planning contributes to more accurate project scopes and budgets. Projects with detailed stakeholder input tend to have fewer scope changes and budget overruns, thus improving overall performance (Yazici, 2019).

Similarly, a 2022 study by Carter and Wilson focused on the role of proactive risk planning in project performance in the healthcare sector. The researchers found that projects with comprehensive risk planning, which included contingency measures and risk monitoring, achieved better performance results, such as reduced delays and cost overruns.

2.3.2 Decision-Making and Project Performance

Study conducted by Zhang et al. (2022) examined decision-making frameworks in technology projects and found that structured decision-making processes were positively correlated with project success rates. The study highlighted that clear, data-driven decision-making improved project outcomes by reducing uncertainty and aligning team efforts with project goals.

Similarly, a 2023 study by Lee and Kim focused on the construction industry, demonstrating that participatory decision-making where key stakeholders are involved in the decision-making process resulted in better project performance. The research found that engaging stakeholders in decision-making led to increased project satisfaction and reduced conflict, which contributed to improved project outcomes.

Study conducted by Garcia et al. (2021) explored the relationship between decision-making speed and project performance in fast-paced industries. The findings indicated that while swift decision-making could accelerate project timelines, it needed to be balanced with quality to avoid detrimental effects. Projects that balanced decision-making speed with thorough analysis demonstrated better performance and fewer post-implementation issues.

Additionally, a 2022 study by Rivera and Martinez examined the impact of consultative decision-making on project performance in public sector projects. The research demonstrated that consultative approaches, where decision-makers seek input from experts and stakeholders, resulted in more informed decisions and better alignment with project objectives, thereby enhancing overall performance. Moreover, a 2024 study by Chen and Lee assessed the impact of project management software on decision-making processes. The research highlighted that integrated software solutions, which offer comprehensive project tracking and decision-making capabilities, led to better project performance by facilitating more effective communication and coordination among team members

2.3.3 Implementation and Project Performance

In their research Aaltonen and Kujala (2020) emphasizes that stakeholder engagement during the implementation phase positively correlates with project performance. Projects involving stakeholders in continuous dialogue and decision-making throughout implementation phases show higher levels of performance. Stakeholders' active involvement helps in identifying and resolving issues early, leading to smoother project execution.

According to world bank report 2021 Active stakeholder engagement during implementation facilitates timely feedback and adjustments, enhancing overall project performance. Projects that maintain open lines of communication with stakeholders tend to have better monitoring processes and more successful outcomes. Phiri conducted a study on the impact of M&E strategies on project efficiency. To identify a significant correlation between M&E-project results, two successfully implemented projects by African Virtual University (AVU), Virtual University for Cancer Control Network (VUCC net), and the Multinational Project (MNP), were evaluated using a blended ex-post-facto research design and survey. Results show that leadership role in monitoring and evaluating the project hasan impact on its effectiveness (Phiri (2015). Yona, Nyonje & Inyega, (2022) in their study about the influence of routine programme monitoring on performance of curriculum instructional project in TVET institutions in Kenya. Ouma and Kamaara (2019) investigated the factors that contributed to the success of Pathfinder International initiatives in Kenya. found that various factors significantly contributed to the success of Pathfinder International initiatives in Kenya. Their findings highlighted positive influences such as effective stakeholder engagement, community involvement, and the adaptability of program strategies.

3. Methodology

This study used a mixed-methods approach to evaluate how stakeholder engagement influenced the Green Gicumbi Project's performance. Data was collected through surveys, interviews, and document analysis. Participants including relocated residents, project managers, urban planners, and government officials were selected using purposive and stratified sampling. Quantitative data were analyzed using descriptive statistics, regression analysis, and ANOVA to assess the relationship between engagement and performance. Qualitative data underwent thematic analysis to capture stakeholder perspectives and contextual insights. This combination provided a comprehensive understanding of how involvement across planning, decision-making, and implementation phases affected the project's socioeconomic feasibility and overall success.

3.1 Research Design

According to Saunders and Miller (2019), the research design describes how the research is carried out and gave limits within which research be focused on. The research design is the plan of how the study is carried out. In this study the research design descriptive and correlation research design to provide a comprehensive understanding of the influence of stakeholder engagement in project performance in Rwanda.

3.2 Target Population

The target population in this study equaled 150 respondents including 130 representatives of stakeholders and 20 staff from Green Gicumbi Project. Stakeholders include project managers, government officials, community leaders, local farmers, and representatives from non-governmental organizations (NGOs) and civil society organizations (CSOs), involved in the Green Gicumbi Project.

3.3Sample Size of the Study

During this study, the researcher adopted a census sampling technique since the population was quite small. Since the study used a census. A census sampling technique for this study is well-suited to the small target population of 150 individuals. By including every member of the target group, the study ensures that data collection is thorough, accurate, and representative, thereby enhancing the validity and reliability of the findings related to stakeholder engagement and project performance.

3.4 Data Collection Instruments

For this study, a combination of qualitative and quantitative. Data collected through structured questionnaires, interviews, Observation and document analysis. Questionnaires used for quantitative data, while interviews and document analysis provided qualitative insights

3.5 Piloting

The pilot study involved a sample size of 15 participants, selected from the intervention areas of the green Gicumbi project. The aim of this study is to assess the validity and

reliability of the instruments used in the data collection process.

3.6 Reliability

During this study the same questionnaire was administered to the same sample at two different points in time. The correlation between the two sets of responses was calculated to assess the stability of the instrument. And for qualitative data from interviews and focus group discussions, it was independently coded. The inter-rater reliability assessed using Cohen's Kappa coefficient to ensure consistency in data interpretation. Furthermore, the instruments were being pilot tested on a small sample similar to the study population but not included in the main study. Feedback from the pilot test was used to refine the instruments. Data collected through various methods (questionnaires, interviews, focus groups, and observations) and from different sources (residents, local authorities, project managers).

3.7 Validity

During this study the questionnaires and interview guides was developed based on a comprehensive review of the literature and expert consultations. A panel of experts in the field of project management and socio-economic impacts reviewed the instruments to ensure they cover all relevant domains. And this was ensured by aligning the questions with the conceptual framework of the study. Factor analysis was conducted to confirm that the questions are grouped together in a way that reflects the constructs.

3.7.1 Data Processing Methods

Normally, data collected from respondents was in a row form, which are easy to interpret and analyze for conclusions. Data processing is used to transform the respondent's views into meaningful tests. On this note, editing, coding, and tabulation of data are applied to be able to handle it easily.

3.8 Data Analysis

Data analysis is a crucial component of research as it helps in interpreting the collected data to draw meaningful conclusions. The following sections outline the data analysis techniques that were employed in this study, including descriptive statistics, correlation analysis, and regression analysis.

3.8.1 Correlation Analysis

Correlation analysis conducted to measure the strength and direction of the relationship between two continuous variables. The Pearson correlation coefficient (r) was be used for this purpose.

Pearson Correlation Coefficient (r):

The coefficient ranges from -1 to 1, where -1 indicates a perfect negative correlation, 1 indicates a perfect positive correlation, and 0 indicates no correlation.

Formula: $r = \frac{(\sum (Xi - \bar{X})(Yi - \bar{Y}))}{\sqrt{(\sum (Xi - \bar{X})^2 (Yi - \bar{Y})^2)}}$ Where Xi and Yi are the individual sample points, and \bar{X}

Where Xi and Yi are the individual sample points, and \bar{x} and \bar{Y} are the mean values of the x and y variables, respectively.

3.8.2 Regression Analysis

Regression analysis used to examine the relationship between dependent and independent variables. This study was utilizing linear regression analysis to model the relationship.

Multiple Regression Model:

Multiple regression model was employed to predict the value of a dependent variable based on more independent variables (Predictor variables).

The regression equation is $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

3.8.3 Statistical Tests

In testing we used **T-tests**: For comparing means if comparing between two groups of variables (e.g., budget overruns) in projects with vs. without significant stakeholder engagement.

In testing we used **ANOVA**: For comparing means among more than two groups (e.g., influence of different levels of stakeholder engagements on project timeline).

4. **Results and Discussion**

This Section presents the empirical findings of the study, which aimed to investigate the influence of stakeholder engagement on the performance of green Gicumbi in Rwanda. The study utilized descriptive statistics to analyze the frequencies and percentages of respondents' behavior and responses, with a total of 150 respondents considered for the study. The data collection yielded a 100% response rate, meaning that all of the individuals who were selected for the study responded, ensuring that the sample was fully represented. Additionally, Z-score statistics were employed in hypothesis testing, specifically using the Z 0.975 score to assess the significance of the findings.

4.1 Findings

4.1.1 Descriptive Analysis of Stakeholder Engagement and Project Performance

This section explores the impact of stakeholder engagement on the performance of the Green Gicumbi Project in Rwanda. Descriptive statistics were used to assess the role of engagement during different project phases: decision-making, planning, and implementation. The analysis reveals that stakeholder engagement in decision-making had the highest impact on project performance, with a mean score of M = 3.68, followed by implementation (M = 2.82) and planning (M = 2.48). While respondents agreed that engagement improved timelines, resource allocation, and goal achievement, opinions varied depending on the stakeholder group. Regression analysis ($R^2 = 0.986$) confirmed a strong positive correlation between stakeholder involvement and project outcomes. Despite this, there was limited involvement during the planning phase, which suggests that a more inclusive approach from the outset would lead to more effective and sustainable project implementation. These findings underscore the need for deeper engagement, particularly in early project stages.

Table1 : Descriptive of stakeholder engagement in planning process on performance of Green Gicumbi Project

Statements	Ν	Mean	Std. Deviation	
I have participated in stakeholder planning meetings related to the Green Gicumbi	150	3.13	.885	
Project				
I have been involved in the planning processes of the Green Gicumbi project	150	3.19	1.384	
I have much influence on the planning decisions Green Gicumbi project	150	3.25	1.141	
I am very satisfied with the level of involvement in the planning process	150	3.04	1.300	
Engaging stakeholders in the planning process leads to better allocation of resources	150	3.60	1.087	
Engaging Stakeholders during the planning process contributes to project timelines.	150	3.75	1.086	
Engaging Stakeholders during the planning process contributes to Achieving Project	150	3.73	1.080	
goals				
Valid N (listwise)	150			

Source: Field data 2025.

Table1 provides descriptive statistics for various statements related to the planning process in the Green Gicumbi Project, based on responses from 150 participants. The findings show that, on average, participants reported moderate involvement in stakeholder planning meetings (Mean = 3.13) and planning processes (Mean = 3.19), with some variation in responses, as reflected by the standard deviations of 0.885 and 1.384, respectively. Respondents indicated a modest level of influence on planning decisions (Mean = 3.25), with variability in perceptions of their influence, as shown by a standard deviation of 1.141. Satisfaction with involvement in the planning process was slightly lower (Mean = 3.04),

with a relatively high standard deviation of 1.300, suggesting differing levels of satisfaction among participants. The data also reveal that participants generally agreed that engaging stakeholders improves resource allocation (Mean = 3.60), contributes to project timelines (Mean = 3.75), and aids in achieving project goals (Mean = 3.73), though with moderate variability in responses (standard deviations between 1.080 and 1.087). Overall, while stakeholders in the Green Gicumbi Project perceive the planning process to be inclusive and beneficial for project success, there is notable variation in how individuals experience and evaluate their involvement, influence, and satisfaction.

Statements	Ν	Mean	Std.	
			Deviation	
I have participated in decision-making meetings related to the project	150	2.49	1.066	
I am involved in the decision-making processes of the Green Gicumbi project	150	2.44	.901	
I have much Influence on major decisions of the Green Gicumbi Project	150	2.50	1.151	
I am very satisfied with the level of involvement in the decision-making process	150	2.46	1.097	
Engaging stakeholders in decision-making leads to better resource allocation	150	3.63	.986	
Engaging stakeholders during decision-making contributes to the project timeline	150	3.59	.984	
Engaging stakeholders during decision-making contributes to achieving project	150	3.63	.994	
goals				
Valid N (listwise)	150			

Table 2: Descriptive analysis of stakeholder engagement in decision making on performance of Green Gicumbi Project

Source: Field data 2025.

Table 2 presents the descriptive statistics for various statements related to decision-making in the Green Gicumbi Project, based on responses from 150 participants. The findings reveal that, on average, participants reported relatively low levels of involvement in decision-making processes. The mean score for participation in decision-making meetings (2.49) and involvement in decision-making (2.44) indicates that respondents felt only modestly engaged in these aspects. Similarly, the mean score for influence on major decisions (2.50) suggests that participants felt they had limited influence on key project decisions. Satisfaction with involvement in the decision-making process was also low (2.46), with the standard deviation of 1.097 indicating variability in how participants felt about their level of involvement.

However, the responses to the statements about stakeholder engagement in decision-making processes suggest a more positive outlook. Participants generally agreed that engaging stakeholders leads to better resource allocation (Mean = 3.63), contributes to the project timeline (Mean = 3.59), and helps achieve project goals (Mean = 3.63), with relatively low standard deviations (ranging from 0.984 to 0.994), indicating a consensus on the benefits of stakeholder engagement in these areas.

In summary, while participants reported limited personal involvement and influence in the decision-making processes of the Green Gicumbi Project, they recognized the value of stakeholder engagement in improving resource allocation, supporting project timelines, and contributing to the achievement of project goals.

Table 3: Descriptive of stakehold	er engagement	in implementation	on performance	e of Green	Gicumbi Project
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			Std.
Statements	Ν	Mean	Deviation
I have participated in Monitoring meetings related to the Green Gicumbi Project	150	3.11	1.210
I have been involved in the implementation phase of Green Gicumbi project	150	3.23	.958
I am very satisfied on the level of involvement in the Implementation Phase of Green Gicumbi Project	150	3.03	1.003
Engaging stakeholders in the Implementation phase leads to better allocation of resources	150	3.45	.987
Engaging Stakeholders during the implementation Phase contributes to project timelines.	150	3.71	.994
Engaging Stakeholders during the Implementation Phase contributes to Achieving Project goals	150	3.63	1.064
Valid N (listwise)	150		

Source: Field data 2025.

Table 3 presents the descriptive statistics for various statements related to the project implementation phase of the Green Gicumbi Project, based on responses from 150 participants. The data show that participants reported moderate involvement in the implementation phase and related activities. For example, the mean score for participation in monitoring meetings (3.11) suggests a moderate level of engagement, with a standard deviation of

1.210 indicating some variability in responses. Similarly, respondents reported being moderately involved in the implementation phase of the project (Mean = 3.23, Std. Dev. = 0.958), and while satisfaction with their level of involvement was somewhat lower (Mean = 3.03, Std. Dev. = 1.003), there was still a general sense of involvement.

Regarding the benefits of stakeholder engagement in the implementation phase, the participants agreed that such engagement contributes positively to project outcomes. The mean score for better resource allocation due to stakeholder engagement is 3.45, with a relatively low standard deviation of 0.987, indicating that respondents generally agree on this point. Engagement in the implementation phase was also perceived as contributing to project timelines (Mean = 3.71, Std. Dev. = 0.994) and the achievement of project goals (Mean = 3.63, Std. Dev. = 1.064), with participants showing strong agreement, though with some variation in responses.

Overall, the findings suggest that participants feel moderately involved in the implementation phase of the Green Gicumbi Project and generally recognize the value of stakeholder engagement in improving resource allocation, supporting project timelines, and helping achieve project goals.

4.2 Inferential Analysis

This section presents the inferential analysis of the relationship between stakeholder engagement and the performance of the Green Gicumbi Project in Rwanda. Correlation and regression analyses were conducted to examine how engagement during planning. implementation, and decision-making phases influenced project outcomes. The results reveal strong positive correlations between all three dimensions and project performance, with the highest correlation found in the implementation phase (r = 0.948), followed by decisionmaking (r = 0.910) and planning (r = 0.927). Regression analysis confirmed these findings, showing that stakeholder engagement significantly predicts project success ($R^2 = 0.986$, p < 0.001). The regression coefficients further indicate that decision-making engagement had the strongest standardized impact ($\beta = 0.377$), followed by planning ($\beta = 0.318$) and implementation ($\beta = 0.309$). The ANOVA and t-tests also support the model's statistical significance. These results underscore that inclusive stakeholder engagement throughout all phases is critical for achieving strong project performance. See Tables 4-6 for detailed results.

Table 4 : Correlation Analysis

		Stakeholder	Stakeholder	Stakeholder
		Engagement in the	Engagement in the	Engagement in
		planning process	Implementation	decision-making
			Phase	
Stakeholder Engagement in	Pearson Correlation	1	.927**	.910**
the planning process	Sig. (1-tailed)		.000	.000
	Ν	150	150	150
Stakeholder Engagement in	Pearson Correlation	.927**	1	.948**
the Implementation Phase	Sig. (1-tailed)	.000		.000
	Ν	150	150	150
Stakeholder Engagement in	Pearson Correlation	.910**	.948**	1
decision-making	Sig. (1-tailed)	.000	.000	
	Ν	150	150	150

**. Correlation is significant at the 0.01 level (1-tailed).

Table 4 presents the results of a correlation analysis between stakeholder engagement in the planning, implementation, and decision-making phases, and the performance of the Green Gicumbi Project. The findings reveal strong positive correlations between each phase of stakeholder engagement and project performance, all of which are statistically significant at the 0.01 level. Specifically, stakeholder engagement in the planning phase shows a very strong correlation of 0.927 with project performance, indicating that increased involvement during planning is closely associated with better project outcomes. The correlation between stakeholder engagement in the implementation phase and project performance is even higher at 0.948, suggesting that engagement during implementation has the most significant impact on performance. Similarly, the relationship between stakeholder engagement in decision-making and project performance is also strong, with a correlation of 0.910. These results highlight the critical role of stakeholder engagement in all phases of the project cycle, demonstrating that higher levels of involvement in planning, implementation, and decision-making are positively linked to improved project performance.

Table 5: Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.993ª	.986	.986	.131		

Source: Field data 2025.

Table 5 presents the model summary for a regression analysis examining the relationship between stakeholder engagement and the performance of the Green Gicumbi Project. The R-value of 0.993 indicates a very strong positive correlation between the independent variables (stakeholder engagement in planning, implementation, and decision-making) and project performance, suggesting that higher levels of engagement are closely associated with better project outcomes. The R² value of 0.986 means that 98.6% of the variance in project performance can be explained by stakeholder engagement, highlighting the importance of involving stakeholders in all project phases. The adjusted R^2 of 0.986 is very close to the R^2 value, indicating that the model is well-specified and that the predictors used are appropriate for explaining project performance without overfitting. Additionally, the standard error of the estimate (0.131) shows that the model's predictions are relatively accurate, with only a small average deviation from the actual values. Overall, the model demonstrates that stakeholder engagement is a significant predictor of project success, with a high degree of explanatory power and precision.

	Table 6: Coefficient Result					
	Model	Unsta	ndardized	Standardized	t	Sig.
		Coefficients		Coefficients		
		В	Std. Error	Beta		
1	(Constant)	.049	040		1.233	.000
	Stakeholder Engagement in Implementation	.309	.049	.309	6.652	.000
	phase					
	Stakeholder Engagement in decision-making	.377	.046	.377	8.196	.000
	Stakeholder Engagement in planning process	.327	.046	.318	7.109	.000

a. Dependent Variable: Performance of Green Gicumbi Project Field data 2025

Table 6 presents the results of a regression analysis examining the impact of stakeholder engagement on the performance of the Green Gicumbi Project. The constant term is 0.049 with a standard error of 0.040, indicating the baseline performance of the project when no stakeholder engagement occurs. This constant is statistically significant with a p-value of 0.000. Regarding the different phases of stakeholder engagement, the engagement in the implementation phase has a coefficient of 0.309, with a standard error of 0.049 and a standardized beta value of 0.309. This suggests a moderate positive relationship between engagement in the implementation phase and project performance. The t-value of 6.338 and p-value of 0.000 confirm that this factor is statistically significant at the 1% level. Stakeholder engagement in decision-making shows an even stronger effect, with a coefficient of 0.377, a standard error of 0.046, and a beta value of 0.377. This indicates a stronger positive impact on project performance compared to the implementation phase, with a t-value of 8.233 and a p-value of 0.000, signifying statistical significance at the 1% level. Engagement in the planning process also has a statistically significant positive effect on performance, with a coefficient of 0.327, a standard error of 0.046, and a beta value of 0.318. The t-value of 7.185

and the p-value of 0.000 further confirm the statistical significance of this factor. Overall, all three types of stakeholder engagement—implementation, decision-making, and planning are found to have a significant positive impact on the project's performance, with decision-making engagement having the strongest effect.

4. Conclusion and Recommendations

This Section provides a summary of the research findings, conclusions, and recommendations derived from the study on the influence of stakeholders' engagement on the project performance of the Green Gicumbi Project. The study explored how the involvement of stakeholders in planning, decision-making, and project implementation affects the overall performance of the project. The chapter also includes recommendations for project managers, policymakers, and other relevant stakeholders, and suggests areas for further research in the context of stakeholder engagement and project management.

5.1Conclusion

The study concludes that stakeholder engagement has a significant and positive impact on the performance of the Green Gicumbi Project. Through the analysis of data from 150 respondents, it was found that involvement of stakeholders during planning, decision-making, and implementation phases enhances project outcomes. Among these, engagement during implementation had the greatest influence on performance, indicating that consistent stakeholder participation is crucial for maintaining project timelines, managing budgets, and achieving goals. Decision-making engagement was also found to be instrumental, as it encourages ownership, transparency, and alignment with local needs.

Although planning showed a relatively weaker effect compared to the other dimensions, it remains important for defining project scope and expectations. Regression analysis showed that 79.8% of the variation in project performance is explained by stakeholder engagement, emphasizing its critical role. Statistical tests confirmed the model's reliability, normal data distribution, and absence of extreme outliers. The ANOVA and Durbin-Watson results reinforced the strength of the relationship between engagement and performance. Overall, the study highlights the importance of inclusive and continuous stakeholder engagement at every phase of a project, particularly during implementation and decision-making. This approach ensures more successful, efficient, and sustainable development outcomes

Based on the empirical findings, the study concludes that all three dimensions of stakeholder engagement in planning, decision-making, and project implementation have a positive and significant influence on the project performance of the Green Gicumbi Project. The study concludes that stakeholder engagement during the implementation phase has the greatest impact on project performance. This phase appears to be the most critical for ensuring that the project stays on track, meets its objectives, and achieves the desired outcomes. Stakeholder engagement in decision-making is perceived as equally important, with stakeholders agreeing that involving key participants in critical decisions leads to better project outcomes and smoother execution.

The study concluded that the stakeholder involvement in the planning process contributes positively to project performance, its effect is comparatively weaker than engagement during decision-making and implementation. However, planning still plays an essential role in setting clear project goals and expectations. The study found that 79.8% of the variance in project performance can be attributed to stakeholder engagement, demonstrating the central role of effective engagement in driving project success. In conclusion, the study confirms that stakeholder engagement particularly during the implementation phase is a crucial factor in determining the success of the Green Gicumbi Project. The positive impact of stakeholder decision-making. involvement in planning. and implementation underscores the importance of collaborative efforts in achieving project goals. The study suggests that to optimize project performance, stakeholders should be actively involved throughout the project lifecycle, with a particular focus on the implementation phase. Enhancing stakeholder engagement was not only improving project outcomes but also foster sustainable development in Rwanda's future projects

5.2 Recommandations

Based on the findings of the study, the following recommendations are made to enhance stakeholder engagement and improve the performance of the Green Gicumbi Project:

- 1. REMA should develop and enforce national guidelines for effective stakeholder engagement in all environmental projects to ensure consistency and inclusivity.
- 2. FONERWA should allocate dedicated funding streams specifically for community engagement activities within climate resilience and green growth projects.
- 3. The Ministry of Environment should integrate stakeholder participation indicators into national environmental policies and require their inclusion in project monitoring and evaluation frameworks.
- 4. The Government of Rwanda should institutionalize mandatory stakeholder engagement policies in all public infrastructure and environmental programs to strengthen transparency and accountability.
- 5. Gicumbi District should establish local multistakeholder advisory committees to facilitate regular dialogue, feedback, and participation from community members throughout project implementation.

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