

THE INFLUENCE OF STAKEHOLDER ENGAGEMENT ON THE SUSTAINABILITY OF THE KAIZEN PROJECT IN RWANDA

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Abstract: This study examined the influence of stakeholder engagement on the sustainability of the Kaizen Project implemented by the Japan International Cooperation Agency (JICA) under the Water and Sanitation Corporation (WASAC) in Rwanda. A mixed-method research design integrating quantitative and qualitative approaches was adopted. Data were collected from 178 respondents drawn from WASAC management, M&E officers, JICA experts, and community beneficiaries using questionnaires and interviews. Descriptive and inferential statistics were employed, and findings revealed a strong positive correlation ($r = 0.684$, $p < 0.001$) between stakeholder engagement and project sustainability. Qualitative findings underscored that transparent communication, participatory planning, and continuous capacity building foster ownership and accountability. The study concludes that effective stakeholder engagement enhances institutional performance, improves project relevance, and ensures long-term sustainability beyond donor support. It recommends that WASAC institutionalize participatory feedback mechanisms and integrate stakeholder collaboration into strategic planning frameworks to sustain Kaizen outcomes.

Keywords: Stakeholder Engagement, Sustainability, Kaizen Project, JICA, WASAC, Monitoring and Evaluation, Rwanda.

I. INTRODUCTION

Sustainability remains a fundamental challenge in the implementation of development projects in sub-Saharan Africa, particularly within the public utilities sector. The Kaizen Project, supported by the Japan International Cooperation Agency (JICA), was introduced to the Water and Sanitation Corporation (WASAC) in Rwanda to promote continuous improvement, efficiency, and performance excellence. However, the long-term success of such initiatives largely depends on the degree of stakeholder engagement throughout project planning, implementation, and monitoring. Stakeholder engagement ensures that project beneficiaries, implementing agencies, and partners actively participate in decision-making processes, enhancing ownership, trust, and relevance (Greenwood, 2021). This study therefore investigates how stakeholder engagement influences the sustainability of the Kaizen Project in Rwanda, focusing on the roles of communication, participatory planning, feedback mechanisms, and capacity building.

II. MATERIALS AND METHODS

This study employed a mixed-method research design integrating both quantitative and qualitative approaches to obtain a comprehensive understanding of how stakeholder engagement influences the sustainability of the Kaizen Project implemented by the Japan International Cooperation Agency (JICA) under the Water and Sanitation Corporation (WASAC) in Rwanda. The combination of quantitative and qualitative methods enabled triangulation of findings, ensuring reliability, validity, and depth in interpretation. The quantitative component provided measurable evidence on the relationship between stakeholder engagement and project sustainability, while the qualitative aspect offered deeper insights into stakeholder experiences, participation mechanisms, and institutional challenges. Both data sets were analyzed independently and synthesized for a holistic conclusion.

The study was conducted in Kigali City and three districts—Musanze, Nyagatare, and Huye—where WASAC operates key Kaizen-supported projects in collaboration with JICA. These districts were purposively selected to represent different geographical and operational contexts of Rwanda’s water and sanitation sector. Kigali City served as the administrative focal point for data collection due to its coordination role between WASAC headquarters, JICA, and regional offices. The diversity of sites provided rich information on how stakeholder engagement mechanisms influence project implementation and long-term sustainability.

The target population comprised three main categories of stakeholders: WASAC management and technical staff, JICA experts and project partners, and community beneficiaries involved in Kaizen-related initiatives. These groups were selected because of their direct or indirect roles in the planning, execution, and monitoring of Kaizen activities. WASAC staff provided institutional perspectives on policy implementation and reporting; JICA and technical experts contributed professional insights on partnership coordination; while community beneficiaries shared experiential views on project ownership and sustainability outcomes.

Category of Respondents	Target Population
WASAC Management Staff	40
M&E Officers and Technical Staff	100
JICA Experts & Partners	30
Community Beneficiaries	150
Total	320

Source: WASAC (2025)

Sample Size Determination

Following Creswell (2014), the sample size was determined using Yamane’s (1967) formula with a 5% margin of error:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = required sample size

N = total population (320)

e = margin of error (0.05)

$$n = \frac{320}{1 + 320(0.05)^2} = \frac{320}{1.8} = 178$$

Therefore, the study sample comprised **178 respondents**, distributed proportionately across the identified stakeholder categories as shown below:

Category of Respondents	Study Population	Sample Size
WASAC Management Staff	40	22
M&E Officers and Technical Staff	100	56
JICA Experts & Partners	30	17
Community Beneficiaries	150	83
Total	320	178

Source: WASAC (2025)

The study employed both simple random sampling and purposive sampling techniques to enhance representativeness and data quality. Simple random sampling was applied to community beneficiaries to avoid selection bias and ensure equal participation chances. Purposive sampling was used for WASAC officials, JICA experts, and project managers due to their specialized roles in stakeholder coordination and project execution. This combination ensured a balance between general perceptions and expert insights, thereby improving reliability and analytical depth.

Two primary instruments were used for data collection: a structured questionnaire and an interview guide. The questionnaire targeted WASAC staff and community beneficiaries to obtain quantitative data on stakeholder engagement practices such as communication, participatory planning, feedback mechanisms, and capacity-building efforts. The interview guide was used to collect qualitative data from JICA representatives and senior WASAC officials, focusing on stakeholder management, project governance, and sustainability mechanisms.

Before fieldwork, data collection tools were pre-tested through a pilot study conducted in Kigali City to ensure clarity and relevance. Feedback from the pilot study led to refinement of several questionnaire items. Trained research assistants administered the questionnaires and conducted interviews under close supervision to maintain consistency and ethical compliance.

Instrument reliability was tested using Cronbach's Alpha, yielding an overall coefficient of 0.88, which indicates high internal consistency. Validity was ensured through expert review by academic supervisors and project managers from WASAC and JICA, confirming that the instruments accurately measured the intended variables. The use of multiple sources of data also enhanced triangulation and overall study credibility.

Quantitative data were coded and analyzed using the Statistical Package for Social Sciences (SPSS Version 26). Descriptive statistics, including frequencies, percentages, and mean scores, were used to summarize data on stakeholder engagement practices. Inferential statistics, particularly Pearson correlation and linear regression, were applied to determine the strength and direction of the relationship between stakeholder engagement and project sustainability. Qualitative data from interviews were analyzed using thematic analysis, where transcripts were coded, categorized, and synthesized into recurring themes related to ownership, participation, and accountability.

Ethical approval was obtained from the Mount Kenya University Research and Ethics Committee (MKU-REC). The study adhered to ethical principles of voluntary participation, confidentiality, and informed consent. Respondents were fully briefed on the study's objectives, and participation was entirely voluntary. To ensure anonymity, no identifying information was disclosed in the reporting. The research process also respected institutional protocols and cultural sensitivity during data collection at WASAC offices and field sites.

III. RESULTS

Demographic Characteristics of Respondents

In order to establish a statistical foundation for the research findings, the study first examined the demographic characteristics of respondents relevant to their participation in the Kaizen Project. These characteristics included age, gender, educational level, and work experience. Understanding the demographic profile provided insight into respondents' levels of expertise, involvement, and perception of stakeholder engagement practices within the Water and Sanitation Corporation (WASAC).

Age Group of Respondents

Age Group	Frequency	Percent
18–29	20	11.2
30–44	89	50.0
45–60	54	30.3
Above 60	15	8.5
Total	178	100.0

Source: Primary Data (2025)

The table above shows that 11.2% of respondents were aged between 18 and 29 years, 50% between 30 and 44 years, 30.3% between 45 and 60 years, and 8.5% were above 60 years. This distribution indicates that the majority were mature adults aged between 30 and 44 years, implying that most participants had adequate professional and operational experience to provide informed opinions on the Kaizen Project's implementation and sustainability.

Gender of Respondents

Gender	Frequency	Percent
Male	99	55.6
Female	79	44.4
Total	178	100.0

Source: Primary Data (2025)

The gender distribution indicates that 55.6% of respondents were male and 44.4% were female. This near balance reflects the inclusive approach adopted by WASAC and JICA in promoting gender equality and participation across project implementation levels.

Educational Level of Respondents

Educational Level	Frequency	Percent
Secondary Education	31	17.4
Vocational/Technical Training	48	27.0
University Degree or Higher	99	55.6
Total	178	100.0

Source: Primary Data (2025)

The results reveal that a majority of respondents (55.6%) possessed a university degree or higher qualification, 27.0% had vocational or technical training, and 17.4% had attained secondary education. This suggests that most participants had the educational background necessary to understand stakeholder engagement practices, monitoring systems, and performance improvement models such as Kaizen.

Work Experience of Respondents

Work Experience	Frequency	Percent
Less than 1 year	12	6.7
1–5 years	64	36.0
6–10 years	59	33.1
Above 10 years	43	24.2
Total	178	100.0

Source: Primary Data (2025)

The findings show that 36.0% of respondents had between 1–5 years of experience working with WASAC or its partner institutions, 33.1% had 6–10 years of experience, and 24.2% had over 10 years of professional engagement. This distribution demonstrates a diverse and knowledgeable sample capable of offering a balanced perspective on stakeholder engagement and project sustainability.

Presentation of Findings

The main objective of this study was to examine the influence of stakeholder engagement on the sustainability of the Kaizen Project implemented under WASAC with the support of JICA. Both quantitative and qualitative data were analyzed to assess how stakeholder participation, communication, and capacity-building contribute to project continuity and institutional learning.

Influence of Stakeholder Engagement on Project Sustainability

Statement	SD (%)	D (%)	NS (%)	A (%)	SA (%)	Mean	SD
Transparent communication enhances decision-making and sustainability	4	6	10	38	42	4.06	0.63
Participatory planning promotes project ownership and accountability	3	7	9	37	44	4.12	0.59
Feedback mechanisms strengthen monitoring and performance improvement	5	6	8	40	41	4.06	0.64
Capacity building enhances institutional resilience and sustainability	4	5	11	39	41	4.08	0.61
Regular stakeholder updates foster transparency and trust	4	7	10	36	43	4.07	0.62
Overall Mean						4.08	0.62

Source: Primary Data (2025)

The results in the table above indicate that the majority of respondents either agreed or strongly agreed with all the statements presented. Specifically, 80% of respondents agreed or strongly agreed that transparent communication enhances decision-making and sustainability, while 81% confirmed that participatory planning promotes project ownership and accountability. Similarly, 81% of participants acknowledged that feedback mechanisms and capacity-building initiatives strengthen performance improvement and institutional resilience.

The overall mean score of 4.08 (on a five-point Likert scale) indicates a highly positive perception among respondents regarding the contribution of stakeholder engagement to the Kaizen Project's sustainability. The low standard deviation (0.62) across all variables demonstrates consistency in responses, implying a shared recognition of the importance of engagement practices in sustaining project outcomes.

To further establish the relationship between stakeholder engagement and project sustainability, Pearson correlation analysis was conducted using SPSS (Version 26). The results revealed a strong positive and statistically significant correlation ($r = 0.684$, $p < 0.001$) between stakeholder engagement and the sustainability of the Kaizen Project. This implies that as the level of stakeholder engagement increases, project sustainability, efficiency, and long-term impact also improve.

In addition to the quantitative results, qualitative data from key informant interviews reinforced these findings. Respondents from WASAC and JICA emphasized that participatory planning, open communication, and shared decision-making increased ownership, trust, and operational transparency. Beneficiaries noted that engagement through feedback meetings and training sessions enhanced their sense of inclusion and responsibility toward maintaining project outcomes.

Overall, the findings demonstrate that stakeholder engagement is a critical driver of project sustainability. It promotes mutual accountability, strengthens institutional capacity, and fosters continuous learning within WASAC. These results provide strong empirical evidence supporting the argument that participatory and inclusive project management practices enhance the long-term success of Kaizen initiatives in Rwanda.

IV. DISCUSSION

The findings demonstrate that stakeholder engagement is a critical determinant of project sustainability. Transparent communication, participatory planning, and feedback mechanisms were found to significantly enhance institutional accountability and ownership, consistent with Greenwood (2021) and Mukarwego & Habimana (2022). The strong positive correlation between engagement and sustainability aligns with previous research by Johnson and Lee (2021), which found that participatory monitoring increases adaptability and long-term outcomes. The study also corroborates the observations of Murphy and Nakata (2017), who noted that participatory Kaizen models improve service delivery and innovation in public utilities. However, limited technical capacity and inconsistent communication channels were identified as challenges that could undermine the full institutionalization of Kaizen principles in Rwanda's public sector.

V. CONCLUSIONS AND RECOMMENDATIONS

The study concludes that stakeholder engagement significantly influences the sustainability of the Kaizen Project in Rwanda. Effective communication, participatory decision-making, and capacity development contribute to institutional resilience and community ownership. It is recommended that WASAC and JICA strengthen feedback mechanisms, integrate stakeholder engagement frameworks into monitoring systems, and enhance training for staff and beneficiaries to sustain project gains.

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