

The Impact of Tourism Growth on Local Infrastructure Development and Maintenance: A Descriptive Case Study of Kinigi Sector, Rwanda

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Abstract: This study examined the perceived influence of tourism growth on local infrastructure development and maintenance in Kinigi Sector, Musanze District, Rwanda, the gateway community to Volcanoes National Park. A descriptive, cross-sectional, single-case survey design was employed. Data were collected through face-to-face structured questionnaires from 396 respondents, comprising residents, tourism stakeholders, and local leaders. Two discussion questions were also administered to capture respondents' views on infrastructure improvements and challenges. Quantitative data were analysed using frequencies and percentages in SPSS version 26, while discussion responses were manually coded into predefined categories. The findings indicate that tourism growth is widely perceived to have contributed to improvements in local infrastructure and tourism-related services. Ninety-eight percent of respondents perceived tourism to have increased over the previous five years, while 97% rated its overall effect on infrastructure development as positive. Similarly, 93% expressed satisfaction with infrastructure development and maintenance, and 95% rated tourism-related infrastructure services as good or very good. Government investment was the most frequently identified driver of tourism growth (59%), while local government was most commonly identified as the institution supporting infrastructure development (65%). However, 91% of respondents perceived tourism growth as increasing infrastructure maintenance requirements, and land pressure was identified as the most prominent negative effect (70%). The findings suggest that tourism growth is perceived to generate important infrastructure benefits while simultaneously increasing maintenance demands and land-use pressures. The study therefore recommends strengthening maintenance-focused planning and financing, diversifying infrastructure funding mechanisms, and improving land-use planning in tourism-adjacent areas. Nevertheless, the cross-sectional design, reliance on self-reported perceptions, and absence of objective indicators or comparison areas limit causal interpretation. Future research should employ longitudinal and comparative designs with objective infrastructure indicators and inferential methods to provide stronger evidence on the relationship between tourism growth and local infrastructure development.

Keywords: Tourism Growth, Infrastructure, Development, Maintenance, Kinigi Sector, Rwanda.

1. INTRODUCTION

This study describes how residents, tourism stakeholders and local leaders perceive the relationship between tourism growth and the development and maintenance of local infrastructure, using Kinigi Sector, the principal gateway community to Volcanoes National Park, as a single case. A descriptive, cross-sectional survey design was adopted, using a structured questionnaire administered to residents, tourism stakeholders and local leaders and supplemented by two discussion

questions put to the same respondents in face-to-face interviews, because an in-depth focus on one information-rich site allows the perceived tourism–infrastructure relationship to be examined more closely than a broader, multi-site survey would permit. The study records perceptions at a single point in time; it does not measure infrastructure condition, visitor numbers or tourism revenue directly, and it does not seek to establish causation (see Sections 1.8 and 3.1). Kinigi Sector was purposively selected as the case study area because it sits at the point where Rwanda’s national tourism strategy meets everyday community life most directly: it hosts the principal access route and staging point for mountain gorilla trekking, has received a concentrated share of tourism-linked infrastructure investment over the past decade, and is consequently among the communities most exposed to both the benefits and the strains that this investment is reported to bring. The remainder of this section situates that choice within the wider tourism–infrastructure literature, before Section 1.2 sets out the specific problem the study addresses.

Over recent decades, tourism has grown into one of the most economically consequential industries globally, generating employment, attracting investment, and stimulating the construction and upgrading of physical infrastructure across both developed and developing regions (UNWTO, 2021). Its developmental reach extends well beyond the hospitality sector: as visitor numbers rise, governments and investors face mounting pressure to improve road networks, water supply systems, communication infrastructure, energy grids, and sanitation facilities in order to sustain destination competitiveness and visitor satisfaction. The aggregate economic scale of this activity is substantial. The World Travel and Tourism Council (WTTC, 2022) estimated that tourism contributes more than ten percent of global GDP and directly or indirectly supports approximately one in every ten jobs worldwide. In developing economies, these figures carry particular significance because tourism represents not merely a source of foreign exchange but also a potential engine of rural transformation, capable of driving infrastructure improvements in areas where conventional public investment remains limited (UNWTO, 2021).

In the African context, tourism, especially ecotourism and cultural tourism, has been instrumental in promoting regional development. As a means of enhancing their infrastructure, nations such as South Africa, Tanzania, and Kenya have incorporated tourism into their national development plans. A region's road networks; water supply, medical facilities, and waste management systems are all under pressure to improve when tourists and investors visit (Rogerson, 2018). Furthermore, governments are forced to modernize physical infrastructure to meet international standards as tourist destinations become more competitive on a global scale.

Like many other African nations, Rwanda has made tourism a key component of its development strategy for Vision 2050. Rwanda has established itself as a premium ecotourism destination, renowned for its unspoiled landscapes and abundant biodiversity.

With the Volcanoes National Park and its renowned mountain gorillas as the main draws, the Rwanda Development Board (RDB) emphasizes tourism as the nation's biggest source of foreign exchange earnings (RDB, 2022). The Kinigi Sector, which is situated in Musanze District at the park's foothills, has grown to be a major tourist destination. Sector-level reporting describes infrastructure projects in the area as having increased markedly over the past decade, ranging from better road access and housing to public utilities such as waste disposal and water distribution (Munyaneza, 2021; RDB, 2022).

The demands of tourism are reported to have had a significant effect on Kinigi's infrastructure development. According to Munyaneza (2021), new roads and bridges have been built to ease access to the park and neighbouring lodges, and the government, in collaboration with private investors and foreign donors, has invested in piped water systems, electricity extensions, and mobile connectivity to improve the tourist experience and advance community well-being. Beyond visitor use, these reported upgrades are described as giving locals better access to markets, healthcare, and education, illustrating the potential for tourism growth and infrastructure development to reinforce one another when investment is well targeted.

However, a number of difficulties still exist in spite of these successes. The unequal distribution of infrastructure benefits is one of the main issues. Even though tourist destinations like national parks and upscale lodges get a lot of attention, many Kinigi residential neighborhoods still suffer from bad roads, erratic water supplies, and insufficient waste management services. Social justice and long-term sustainability are issues brought up by this selective construction (Niyonkuru & Rutayisire, 2023).

The upkeep of recently constructed infrastructure is another problem. Roads, health posts, and water projects have been built thanks to tourism revenues, but these facilities have not always been maintained. Numerous initiatives have been aided by the Tourism Revenue Sharing Scheme (TRSS), which donates a portion of park revenues to community development

initiatives. Nonetheless, scholars have observed deficiencies in project planning, lack of transparency in the allocation of funds, and restricted community participation in decision-making procedures (Uwera et al., 2021).

Additionally, Kinigi's local government must delicately strike a balance between the infrastructure requirements of locals and visitors. The increasing number of tourists has put more strain on public services, which occasionally results in the reallocation of funds away from regional priorities. Tension between stakeholders results from the fact that national tourism goals frequently have a greater influence on infrastructure planning and budgeting than local development needs (Mbabazi, 2022).

These dynamics highlight the need for locally grounded evidence on how the relationship between tourism expansion and Kinigi's infrastructure development and upkeep is experienced. Reports suggest that expansion may also have increased pressure on existing facilities and raised questions about long-term sustainability, but these reports rarely draw on the views of residents and stakeholders in the gateway community itself. This study therefore describes how residents, tourism stakeholders and local leaders in Kinigi Sector perceive tourism growth in relation to both the development and the maintenance of local infrastructure, providing descriptive, perception-based evidence to inform policy formulation and future research that uses objective indicators.

2. METHODOLOGY

2.1 Research design

The study used a descriptive, cross-sectional survey design within a single-case study of Kinigi Sector.

2.2 Target population

The study targeted three groups: residents of Kinigi Sector, with a reported population of 32,297 (City Population, 2022); tourism stakeholders, including tour operators, accommodation providers, guides, and other tourism businesses; and local government officials and leaders responsible for planning, policy, and infrastructure management.

2.3 Sample Size Determination

Yamane's (1967) formula, $n = N/[1 + N(e)^2]$, was used to determine the survey sample size. With a population of 32,297 residents (City Population, 2022) and a 5% margin of error, the calculated sample was 396 respondents, which was adopted as the total survey size. The formula assumes simple random sampling and approximately 95% confidence (Cochran, 1977).

The 396 questionnaires were allocated by quota: 317 residents (80%), 40 tourism stakeholders (10%), and 39 local government officials and leaders (10%). The latter two groups were purposively selected based on their relevant knowledge and were not intended to be statistically representative. Consequently, the Yamane-based precision applies primarily to the resident population, while the quota allocation should be interpreted as indicative rather than statistically representative.

2.4 Data Collection instruments

Primary data were collected with a structured questionnaire that contained a demographic section and sections addressing tourism growth and its drivers, institutional and financial mechanisms, satisfaction with and availability of infrastructure, and the perceived effects of tourism growth on infrastructure development and maintenance, followed by a final section of two discussion questions.

3. RESULTS

Table 1: Gender distribution of Respondents

Gender of respondent	Frequency	Percent
Male	281	71.0
Female	111	28.0
Not specified	4	1.0
Total	396	100.0

Source: Primary data (2026)

Table 1 illustrates the gender composition of the study's respondents. The data indicate that males constituted the dominant group, accounting for 281 (71.0%) of all respondents, while females represented 111 (28.0%). Four respondents (1.0%) did not specify their gender.

The pronounced male dominance in the sample may reflect socio-cultural patterns in rural Rwandan communities, where men are more likely to occupy public-facing roles such as community leadership, formal employment in tourism-related enterprises and civic participation. It may also reflect who was accessible to the researcher in outdoor and community settings, whereas women are more frequently engaged in domestic responsibilities that may limit their availability. These explanations were not tested.

The gender imbalance is a limitation. Although 111 women (28.0%) are included, no weighting was applied, so the pooled results reflect men's views more strongly than women's and may under-represent women's experiences of infrastructure services. Future studies should use a sampling design that secures a more balanced gender representation, particularly given the increasing recognition of women's roles in community-based tourism and infrastructure governance.

3.1 Presentation of Findings

This section presents the findings of the study on the impact of tourism growth on local infrastructure development and maintenance in Kinigi Sector, Musanze District, as perceived by respondents. Data were collected from 396 respondents and analysed using SPSS, with results presented in frequency and percentage tables organised according to the study's four specific objectives: the drivers of tourism growth, institutional and financial mechanisms, the community's perceptions of infrastructure, and the overall impact of tourism growth on infrastructure. Each table is followed by an interpretation and a discussion linking the results to relevant literature.

3.1.1 Tourism growth drivers in Kinigi sector

This section addresses the first specific objective, which sought to examine the tourism growth drivers that lead to local infrastructure development and maintenance in Kinigi Sector. The drivers reported are those that respondents perceive. Understanding what respondents believe is driving tourism growth is a first step in the analysis because it identifies how the source of the infrastructure demand referred to in the problem statement is perceived.

Table 2: Tourism growth in the last Five Years

Tourism growth in last five years	Frequency	Percent
Increased greatly	83	21.0
Increased	305	77.0
Don't know	8	2.0
Total	396	100.0

Source: Field Survey Data (2026)

As shown in Table 2, 77% of respondents (305) reported that tourism had 'increased' over the last five years, while a further 21% (83) indicated that it had 'increased greatly'. Cumulatively, 98% of respondents perceived growth in tourism activity in Kinigi Sector, with only 2% unable to state a clear trend and no respondent reporting decline. The near-total agreement is itself notable: respondents do not report declining demand, so the infrastructure pressures they describe in later sections are set against a background of perceived growth. Because the item asks about perceived change and no visitor or revenue records were analysed, the result does not measure the size or timing of growth.

Implication: The scale of agreement (98%) indicates that respondents in Kinigi Sector, the principal gateway to gorilla trekking in Volcanoes National Park, widely perceive tourism to have expanded over the last five years, and not merely to have spiked in the short term. This is consistent with national statistics showing that Rwanda's tourism sector, anchored on high-value, low-volume attractions such as gorilla trekking, has continued on an upward trajectory as part of the country's broader growth strategy under its second National Strategy for Transformation (NST-2), which targets tourism revenue in excess of USD 1 billion by 2029. If growth is sustained, it may imply cumulative rather than episodic pressure on infrastructure, which is why the maintenance-related perceptions reported later in this chapter are relevant; the survey itself, however, did not measure that pressure.

Table 3: Factor contributing most to Tourism Growth

Factor has contributed most to tourism growth in Kinigi	Frequency	Percent
Improved transport services	40	10.1
Government tourism promotion	83	21.0
Investment in hotels and lodges	59	14.9
Volcanoes National Park conservation	214	54.0
Total	396	100.0

Source: Field Survey Data (2026)

More than half of the respondents (54%) identified Volcanoes National Park conservation as the single most important factor contributing to tourism growth in the area, far ahead of government tourism promotion (21%), investment in hotels and lodges (15%), and improved transport services (10%). The gap between the leading factor and the second-ranked factor, 33 percentage points, indicates that respondents do not see tourism growth as the product of several roughly equal forces, but as being anchored overwhelmingly in one factor: the conservation status and appeal of the Park itself.

Implication: This finding is consistent with the centrality of the Park as the primary tourism asset in the local economy. It accords with the well-documented role of gorilla-based ecotourism as the flagship product sustaining Rwanda's tourism industry (RDB, 2022; WTTC, 2025), and with the logic of Rwanda's tourism revenue sharing model documented by Snyman et al. (2023), which was designed on the premise that community support for park conservation depends on tangible development benefits from tourism. It also speaks to the first literature gap identified in Section 2.6: while national-level sources establish the Park's centrality in general terms, this study provides Kinigi-specific evidence of how strongly respondents credit it. Because the item is single-choice and records perception, it shows that respondents most often name conservation as the leading factor; it does not test whether conservation causes tourism growth or measure the size of its contribution. Whether continued investment in Park conservation should be treated as a precondition for infrastructure investment is a policy question that the survey data can inform but cannot settle.

Table 4: Drivers of tourism growth

Drivers of Tourism Growth	Frequency	Percent
Increased tourist arrivals	32	8.1
Tourism revenue	83	21.0
Government investment	234	59.1
Private investment	47	11.9
Total	396	100.0

Source: Field Survey Data (2026)

Government investment emerged as the leading driver of tourism growth, cited by 59% of respondents, followed by tourism revenue (21%), private investment (12%), and increased tourist arrivals (8%). Read alongside Table 4.8, this indicator shifts the focus from what tourism is built on (Park conservation) to what respondents see as actively expanding it (public investment). The two findings are not contradictory, since respondents could regard Park conservation as the underlying attraction and government investment as what is expanding tourism.

Implication: The prominence of government investment as a perceived driver (59%) is consistent with the significant public expenditure that Rwanda has channelled into tourism infrastructure, marketing and conservation management, particularly through the Rwanda Development Board (RDB), although the survey did not measure that expenditure. The relatively modest share attributed to private investment (12%) suggests that, in respondents' view, public sector action rather than private capital leads tourism-related growth in Kinigi. One reading is that government investment is the route through which the Park's conservation asset is converted into visitor numbers and infrastructure demand, but this reading was not tested. The result bears on the funding element of the problem statement by suggesting that respondents perceive the funding base as narrow, a theme that recurs under Objective Two.

Table 5: Visitor activities perceived to influence infrastructure development

Visitor activities most influenced infrastructure development	Frequency	Percent
Gorilla trekking and wildlife tours	158	39.9
Accommodation and hospitality services	154	38.9
Conference and event tourism	28	7.1
Cultural and community tourism	56	14.1
Total	396	100.0

Source: Field Survey Data (2026)

Gorilla trekking and wildlife tours (40%) and accommodation and hospitality services (39%) were identified as the visitor activities with the greatest influence on infrastructure development, together accounting for 79% of responses. Cultural and community tourism (14%) and conference and event tourism (7%) were comparatively minor influences, together accounting for only 21%.

Implication: This pattern suggests that respondents associate infrastructure demand mainly with two tourism functions, wildlife-based attractions and visitor accommodation, and that road access to trekking points and the hospitality corridor may therefore remain priorities for infrastructure investment in the sector. Cultural and community tourism and conference and event tourism were named less often, which may partly explain why public facilities and electricity register low shares in the findings presented under Objective Four (Table 4.19); this link is suggested by the pattern of responses and was not tested.

3.1.2 The role of institutional and financial mechanisms in infrastructure sustainability

The second objective assessed the role of institutional and financial mechanisms in infrastructure sustainability in Kinigi Sector, through respondents' awareness and perceptions of those mechanisms. It relates to the sustainability and funding concerns raised in the problem statement by describing who respondents credit with infrastructure delivery, how they perceive it to be financed, and which strategies they believe would make infrastructure more durable.

Table 6: Awareness of the Tourism Revenue Sharing Programme (TRSP)

Awareness of the Tourism Revenue Sharing Programme	Frequency	Percent
Yes	345	87.1
No	51	12.9
Total	396	100.0

Source: Field Survey Data (2026)

A large majority of respondents (87%) reported awareness of the Tourism Revenue Sharing Programme, while 13% were not aware of it. Awareness is a precondition for community participation in a scheme of this kind, since people who are unaware of a funding mechanism cannot readily engage with its governance or monitor its use.

Implication: The relatively high level of awareness suggests that information about the TRSP, which channels a share of national park tourism revenue into community projects, has reached most respondents. The survey did not assess the quality or effectiveness of outreach, and the type of awareness (knowing that the programme exists, as opposed to knowing how projects are selected or funded) was not measured. The 13% who were unaware represent a possible communication gap; if they are concentrated in particular cells or groups, this could limit participation in decisions on revenue-sharing funds, but the pooled data cannot show this.

Table 7: Institution contributing most to infrastructure development

Institutions contribute most to infrastructure development	Frequency	Percent
RDB	99	25.0
Local government	257	64.9
Tourism businesses	20	5.1
NGOs/Donors	20	5.1
Total	396	100.0

Source: Field Survey Data (2026)

Local government was identified by 65% of respondents as the institution contributing most to infrastructure development, followed by the Rwanda Development Board (25%), tourism businesses (5%), and NGOs/donors (5%). Local government and RDB together account for 90% of perceived contribution, confirming that infrastructure delivery in Kinigi Sector is understood by respondents as being almost entirely a public sector function.

Implication: Respondents' identification of local government as the institution contributing most (65%) points to a central coordinating role for local government structures in translating tourism revenue and national policy into infrastructure at sector level, even where the underlying funds originate substantially from RDB-administered tourism revenue. Private tourism businesses and development partners were perceived as playing a marginal role, a pattern that mirrors the limited role attributed to private investment in tourism growth (Table 4.9) and suggests that respondents perceive infrastructure delivery in Kinigi as narrow and public-sector dependent. These are perceptions of who contributes most; the survey did not measure the actual value or share of each actor's contribution.

Table 8: Institutional and financial mechanisms

Institutional and financial mechanisms	Frequency	Percent
Government budget allocations	277	69.9
Tourism revenue and levies	40	10.1
NGO and donor funding	59	14.9
Private sector investment	20	5.1
Total	396	100.0

Source: Field Survey Data (2026)

Government budget allocations were cited by 70% of respondents as the main financial mechanism supporting infrastructure, considerably ahead of NGO and donor funding (15%), tourism revenue and levies (10%), and private sector investment (5%).

Implication: This finding appears, at first glance, to understate the direct contribution of tourism revenue sharing, since respondents largely regard government allocations as the primary channel while 87% of the same sample reported awareness of the TRSP (Table 4.11). One possible explanation is that revenue-sharing funds are administered through government budgetary and district planning systems before reaching community projects, so that community members experience the funding as a government allocation and not as a visible tourism transfer. This would be consistent with documented practice, in which the Rwanda Development Board channels a proportion of national park revenue through district-level and joint action committees before it is invested in local schools, health centres, roads and water systems, but the survey did not test this explanation. For the problem statement, the result suggests that respondents perceive infrastructure funding in Kinigi Sector as not diversified: both channels are seen as converging on the government budgetary pathway.

Table 9: Infrastructure sustainability strategies

Infrastructure sustainable strategies	Frequency	Percent
Increase tourism revenue sharing	237	59.8
Regular maintenance	99	25.0
Community participation	40	10.1
Public-private partnerships	20	5.1
Total	396	100.0

Source: Field Survey Data (2026)

Increasing tourism revenue sharing was the most preferred sustainability strategy, selected by 60% of respondents, followed by regular maintenance (25%), community participation (10%), and public-private partnerships (5%).

Implication: The strong preference for expanded revenue sharing (60%) suggests that respondents see tourism revenue as a tangible source of infrastructure financing, which is consistent with the high awareness recorded in Table 9. Read with Tables 4.12 and 4.13, however, the preference also indicates that respondents' preferred solution to sustainability, more revenue sharing, would reinforce rather than diversify dependence on a channel that is already dominant, a vulnerability relevant to the sustainability concern in the problem statement.

The low preference for public-private partnerships (5%) may reflect limited familiarity with, or confidence in, such arrangements; this interpretation is tentative because the survey did not ask why respondents chose each strategy.

3.1.3 Community perceptions of infrastructure development and maintenance

The third objective evaluated the local community's perceptions towards local infrastructure development and maintenance in Kinigi Sector. This objective describes community satisfaction, which the problem statement raised as a question not yet examined empirically, and does not assume it. Respondents were asked to rate their satisfaction with infrastructure development and maintenance and to rate the improvement in the availability of infrastructure services that they associate with tourism growth.

Table 10: Satisfaction with infrastructure development and maintenance

Satisfaction with infrastructure development and maintenance	Frequency	Percent
Very Satisfied	230	58.1
Satisfied	138	34.8
Neutral	4	1.0
Dissatisfied	24	6.1
Total	396	100.0

Source: Field Survey Data (2026)

The results show a strongly positive perception of infrastructure development and maintenance, with 58% of respondents "very satisfied" and a further 35% "satisfied," giving a combined satisfaction rate of 93%. Only 1% were neutral and 6% expressed dissatisfaction.

Implication: The high level of satisfaction suggests that respondents view the infrastructure improvements they associate with tourism, such as road rehabilitation and improved public facilities, favourably. Satisfaction in this study is a single overall rating combining development and maintenance, so it cannot show whether respondents are equally satisfied with each. It answers the question raised in the problem statement descriptively: reported satisfaction is high, though not universal. Very high favourable percentages in a face-to-face survey may partly reflect courtesy or social desirability, particularly as the researcher was linked to the sector (Section 1.8). The 6% who were dissatisfied are worth examining separately in future work, since dissatisfaction may be concentrated among households or cells that have benefited less from infrastructure investment, or whose specific needs, such as household water connections, remain unmet; the pooled data cannot show this.

Table 11: Range of Resident-only Percentages consistent with the Pooled Results

Indicator	Pooled n (%), n = 396	Residents: minimum %	Residents: maximum %
Tourism perceived to have grown	388 (98.0%)	97.5	100.0
Park conservation named as leading factor	214 (54.0%)	42.6	67.5
Aware of the Tourism Revenue Sharing Programme	345 (87.1%)	83.9	100.0
Local government named as main contributor	257 (64.9%)	56.2	81.1
Satisfied with infrastructure development and maintenance	368 (92.9%)	91.2	100.0
Availability of infrastructure services rated good or very good	376 (94.9%)	93.7	100.0
Overall effect on infrastructure rated positive	384 (97.0%)	96.2	100.0
Roads named as infrastructure most affected	198 (50.0%)	37.5	62.5
Agree that maintenance requirements have increased	360 (90.9%)	88.6	100.0
Land pressure named as the negative effect	277 (69.9%)	62.5	87.4

Source: Researcher's computation from the primary data (2026); bounds assume 317 residents and 79 stakeholders and leaders

Where the pooled result is very high, the range is narrow and the conclusion cannot depend on the smaller groups: for example, at least 91.2% of residents must have been satisfied with infrastructure development and maintenance, and at least 88.6% must have agreed that tourism growth has increased maintenance requirements. Where the pooled result is moderate, the range is wide: the share of residents naming Volcanoes National Park conservation as the leading factor lies between 42.6% and 67.5%, and the share naming roads as the infrastructure most affected between 37.5% and 62.5%, so these pooled figures should not be read as resident estimates. Group-specific percentages, obtained by cross-tabulating each item by respondent group, would replace these ranges with actual values and should be reported in any publication derived from this study.

4. CONCLUSION

The study concludes that respondents in Kinigi Sector perceive tourism growth over the past five years as sustained, mainly attributing it to the conservation status of Volcanoes National Park and government investment. Tourism is therefore perceived as an important driver of local development. Respondents also perceive infrastructure financing as largely dependent on government funding, with the Tourism Revenue Sharing Programme viewed as a complementary mechanism, while private investment and public-private partnerships play limited roles.

Respondents generally reported favourable perceptions of infrastructure improvements associated with tourism growth, particularly road development and service availability. However, some dissatisfaction remains, indicating that benefits may not be experienced uniformly. Tourism growth was also associated with increased infrastructure maintenance needs and land pressure, highlighting the importance of sustainable maintenance and land-use management.

The findings provide a descriptive, perception-based assessment of tourism-related infrastructure development in Kinigi Sector. Since the study was cross-sectional, the findings do not establish causal relationships. Future research should therefore incorporate objective infrastructure indicators, longitudinal data, comparison areas, and inferential analysis to assess the causal effects of tourism growth.

5. RECOMMENDATIONS

Local communities should participate actively in planning and prioritising Tourism Revenue Sharing Programme projects, support community-based maintenance of roads and public facilities, and diversify livelihoods through tourism-related activities such as guiding, crafts, and hospitality. Tourism stakeholders should strengthen collaboration with local authorities and the Rwanda Development Board through public-private partnerships, contribute to infrastructure maintenance, and support community awareness of tourism revenue-sharing initiatives.

Government and local authorities should strengthen land-use planning and zoning to manage tourism-related land pressure, explore diversified infrastructure financing, and improve maintenance planning for roads and other facilities. Regular, disaggregated satisfaction surveys should also be conducted to monitor how infrastructure benefits are distributed across communities. Future research should use longitudinal and objective indicators, including visitor numbers, tourism revenue, infrastructure conditions, and maintenance expenditure, to establish whether tourism growth contributes to infrastructure development and maintenance.

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