

Potential for tourism to promote indigenous resources for community development in Musina Municipality, Vhembe District, Limpopo Province, South Africa

Potential for
tourism

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Abstract

Purpose – This study evaluates “potentials for using tourism in promoting indigenous resources for community development at Musina Municipality, Limpopo Province, South Africa.”

Design/methodology/approach – The study used a questionnaire survey, focus group discussions, and field observations to gather data. Microsoft Excel, Spreadsheet, cross-tabulation analysis, and manual sorting contributed to quantitative and qualitative data analyses.

Findings – The study uncovered vast significant indigenous species, resources, and tourism potentials with low impacts of indigenous species and resource benefits to the local communities. The details pointing to the actual and potential indigenous resources situations around tourism activities in Musina municipality emerged prominently. Thus, the study concluded such significant indigenous species, resources, and better tourism potentials need a well-combined strategy to channel the benefits to the local community's livelihoods.

Originality/value – The issue of indigenous resources, forests, trees, and tourism concerning rural community livelihoods has become of curiosity in the past few years. Nonetheless, few such studies have investigated the synergies between tourism and significant indigenous species and resources to improve their livelihoods.

Keywords Tourism, Indigenous species, Indigenous resources, Community-based natural resource management, Community-based tourism, Forestry, Community development, Livelihoods and sustainability

Paper type Research paper

Introduction

The 1998 South African Job Summit advocated for utilizing the tourism sector to empower local communities in rural areas by improving income generation, reducing unemployment and curbing poverty (Ramaano, 2019). A local tourism industry can be a source of economic development for many governments worldwide (DEAT, 2000a, b; Leung, 2002) and a case can be made for significant investment in tourism, especially in rural areas, to help empower previously disadvantaged individuals (PDIs) (Kirsten and Rogerson, 2002; Keyser, 2002;

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Ramaano, 2019). The Musina rural communities have demonstrated just how imperative such investments are to better their socio-economic statuses (South Africa, 1996; Shackleton *et al.*, 2007; Ramaano, 2021a).

Tourism can promote development within impoverished rural communities that lack reliable sources of income and livelihoods. The possibility of tourism in the Musina Municipality is significant, as is finding ways to implement the right strategy to encourage visitors to the natural biodiversity in the area and therefore improve rural livelihoods around the preserved natural areas as has been successfully achieved around the globe (Bennett *et al.*, 2012). In addition to hospitality venues and established parks, there is also a need for well-orchestrated structures within tourism and national development schemes to efficiently direct industry benefits to neighboring local communities in remotes areas. Therefore, the position of the Musina Municipality along with the role of tourism and significant indigenous resources in the area must be valid (Scheyvens, 1999; Ramaano, 2021d). Tourism development should include relevant measures for economic improvements in impoverished rural communities in tandem with the advancement of tourism while sustaining income generation potentials within the destination areas (Ashley *et al.*, 2000; Goodwin, 2002; Ashley, 2002; Bennett *et al.*, 2012). Much research has demonstrated how tourism improves the livelihoods of local communities. For example, Eagles *et al.* (2002), Ferreira (2004), Chok *et al.* (2007), Scheyvens (2007), Zhao and Ritchie (2007), Mitchell and Ashley (2010), Jamal *et al.* (2009) and UNEP (2016) attested to the benefits for local communities around conservation areas. Indeed, Shackleton *et al.* (2007) indicated that indigenous forests and savannas with plantation forests render variable benefits to rural communities and the broader society. Their study appraised the role of conservation and forestry in sustainable livelihoods and poverty alleviation strategies and plans. The latter relates well to the adjacent tourism enterprises of villages studied in this research, including the Big Tree Nature Reserve, Nwanedi Nature Reserve and resorts associated with the reserves, among others in the study area, which is home to various significant indigenous species.

Madubansi and Shackleton (2007) maintained that fuel wood from the mopani trees (*colophospermum mopane*) found in most rural areas is the primary energy source for domestic purposes in the developing world, in both urban and rural environments. Meanwhile, Maikhuri *et al.* (1994) asserted that the Himalayas is a significant source of wild fruit species mainly harvested in summer during their appraisal of the potential of fruit varieties into optional food source commodities for community development. With that, Leakey and Schreckenber (2003) advocated for participatory forest management to improve the livelihoods of impoverished communities through the domestication of indigenous species in West Africa. To this end, Akinnifesi *et al.* (2005) urged for small farmer opportunities and potential within the paradigms of domesticating several significant indigenous species in southern Africa for rural livelihood improvements. Miombo fruit trees are a potential marketing crop in southern Africa (Akinnifesi *et al.*, 2006) according to Akinnifesi *et al.* (2007), who recognized the need to cultivate and market indigenous fruit and nut tree crops for food security and income generation in sub-Saharan Africa. The “cash for common” scheme was created by Nemarundwe and Ngorima (2008) during their investigation, after which they expressed optimism about the value of indigenous species and resources in poverty alleviation.

For rural community advancement in Africa Jamnadass *et al.* (2011) argued for better nutrition and livelihoods in sub-Saharan Africa through fruit production advancement. Akin to the specified, Magaia *et al.* (2011) indicated that dry land indigenous fruit commercialization plays a significant role in improving the socio-economic statuses of impoverished rural communities in east and central Africa. Given such assertions, Venter and Witkowski (2011) highlighted the need for communal conservation measures toward

indigenous fruits for food security within the remote and often overlooked Venda communities and evaluated the components of baobab tree fruits (2013). To that end, Shackleton *et al.* (2019) maintained that interpretation of nature and the environment are becoming increasingly vital aspects for environmental management and preservation. There are several research knowledge gaps in previous studies, including any about the value of forest resources such as fuel, woods, fruits and nuts, and none prioritized tourism as the dictator or the synergy required of such initiatives to create livelihoods improvement.

Rogerson and Rogerson (2019) attested that the essential focus amongst numerous studies clearly revolved around tourism development and local economic development (LED) planning while Rogerson (2020) argued for emphasizing municipality assets as part of place-based economic development initiatives. Henceforth, Rogerson and Rogerson (2020) stated the significance of the inclusive tourism concept and maintained its positivity in empowering previously disadvantaged and marginalized rural communities in South Africa. Despite the rise in interest toward indigenous tourism in public policy and academic literature, tourist views of indigenous tourism remains under-investigated (Ryan, 2002, 2005; McIntosh, 2004; McIntosh *et al.*, 2007). Therefore, Timothy and Nyaupane (2009) maintained that existence culture is a vital section of heritage tourism in the less-developed world. Agricultural landscapes, lifestyles, arts and handicrafts, among others, are components of the cultural panorama that render sufficient interest for tourism in less-developed countries (LDCs). Pechlaner *et al.* (2011) contended that minority settings, with their cultural uniqueness and tendency to maintain cultural norms, can appeal to tourists. The study area in Musina Municipality has plenty of natural biodiversity and an abundance of rural tourism potentials, such as agricultural and cultural tourism resources that could significantly advance the livelihoods of various communities if the right parameters and strategies were in place (Ramaano, 2019). The stated problem is that despite the abundance of indigenous species and resources in the study area, they do not appear to be upon their full potential utilization. Tourism could help increase their marketability while synergistically improving local communities, as they also possess vital tourist attraction values in the study area. Hence, the research question is: How can tourism be applied in promoting significant indigenous species and resources for community development in the Musina Municipality? This study argues that a detailed investigation into indigenous assets within the study area in Musina Municipality is required, vital steps can be appraised and instituted to integrate them into environmental management, tourism initiatives, community development, and other possible productive paradigms. The study findings will capably sensitize local and international societies about the multiple benefits of the resources for communities, ranging from rejuvenating heritage and traditional values of biodiversity and livelihood improvement to sustainability (De Azeredo Grünewald, 2002, 2021a-f).

The broad idea of alternative tourism development

The Alternative Tourism Development was formulated as part of the expansion of the sustainable development concept and is focused on local entrepreneurship response, indigenous knowledge in tourism development, the advancement of local communities in the decision-making process, the fundamental function of women in tourism and sustainable tourism development (Wall, 1997; Sharpley, 2000; Telfer, 2002, 2003; Triarchi and Karamanis, 2017). In the Musina Municipality and study area, a potential tourism strategy could gain from the abundance of cultural heritage resources within the region. To this account, there are a host of natural activities, such as mountains, caves, hot springs, waterfalls and fountains, and many significant indigenous species, such as baobab and marula trees (Ramaano, 2019, 2021b). The indigenous plants and the tourism activities have potential value for influencing the preservation of traditional and local knowledge of significant biodiversity. Research has suggested that indigenous communities are not only affected by tourism but that they can offer returns through entrepreneurial initiatives (Sharpley, 2000; Sharpley and Telfer, 2002;

Chifon, 2010; Porter and Orams, 2018; Ramaano, 2021d). It has also been argued that, as tourism areas are established, the local communities supply labor and building materials, thereby positively affecting the lives of residents. Local farmers and fishers can also generate and supply food for tourist areas and businesses thereby strengthening the financial basis of the indigenous communities. With such assets, this supposition also suggests that tourism planning should be set by the principles of sustainable development, e.g., sound ecological practices, broad engagement with and participation of the local communities, and capacity building within these communities to advance vital elements (Selman and Selman, 1996; Shepherd, 1998; Garrod, 2003).

By applying this postulation to the Musina Municipality and study area, this research sets out to broadly weigh the degree to which the tourism initiatives and government are abiding by the essential commitment, namely encouraging local entrepreneurship advancement and boosting the underprivileged communities. The government should link with procurement, employment and skills development through local training. The study also implicitly assesses the strengths of development and tourism development policies in Musina Municipality along the spectrum of the guiding principles (Ramaano, 2021b) and considers and prioritizes a small-scale procurement policy and supply chain. The scenario is specifically directed toward previously disadvantaged communities' local businesses, including. The tourism host communities of Folovhodwe, Gumela, Tshipise and Zwigodini. It is imperative that the alternative supposition of tourism states that, where there is tourism business, the workforce must be from the local population and communities. The Alternative Tourism Development prioritizes the considerations and sustainable empowerment of women as they play different roles in tourism businesses, from activities such as traditional handicrafts to working in hospitality establishments. This fits aptly into the prospects and theme of this study on improvements through a decent tourism development policy and strategy and endorsing indigenous resources in the study area communities.

Equality is one of the integral standards of sustainable rural tourism development (Xiang *et al.*, 2015); this study also supports the significant role of women in tourism programs as livelihood opportunities for local communities. The adherence to this assumption can be seen in Figures 3 and 4 on sustainable tourism ideals and sustainability of livelihoods that assist in estimating both potentially positive and detrimental consequences of tourism. Some of these elements were included in the introduction that incorporated the research question resonated with the questionnaire survey feedback from the communities within the study area. The gist of referring to this approach was to check whether the Musina Municipality was heading in the right direction about the tourism development policy and indigenous resources strategy and introduced the significance of potentially tapping into different expertise (Chifon, 2010; McLennan, 2014; Dangi and Jamal, 2016; Ramaano, 2021b).

The essence of sustainable development, sustainable tourism, and sustainability

Similar to the concept of alternative development, this inquiry backed the ideas and views of sustainable tourism. Sustainable development, sustainable tourism and sustainability were covered equally in the literature (Liu, 2003; Ramaano, 2021d). High global regard for sustainability has established an obligation for companies to warrant the utility of their commodities and services against their profit and manage the contradictory results of their activities (Moscardo and Murphy, 2014; Ramaano, 2019, 2021b, c). The policy position points of sustainable tourism are primary and a fulcrum to current institutional methods and policy environments at international, national, and local levels. Therefore, there is a need to administer tourism activities around sustainable tourism themes within several frameworks in specific areas and pertinent countries to empower livelihoods for local communities (Moscardo, 2014; Hall *et al.*, 2015; Ramaano, 2019).

Broad notions on community-based natural resource management and community-based tourism activities

This study also endorses the significance of Community-Based Natural Resource Management (CBNRM) and Community-Based Tourism (CBT) suppositions for the study area communities. CBNRM is concerned with locals converging to protect their land, water, animals and plants so that they can use these natural resources to enhance their lives and those of future generations. It is a methodology designed to enable every willing community member to have a role to play in enhancing the quality of lives economically, culturally, and spiritually. Admittedly, CBNRM is a strategy that encourages locals to work together to protect their natural resources while at the same time bring long-lasting profit to the community. Successful CBNRM can have many advantages, such as access to resources, enhance farming and food supplies, create jobs, build small businesses, provide opportunities for education and training, build community organization, improve community health, and maintain and strengthen cultural and spiritual values (DEAT, 2003). The base assumption of CBNRM is that people who live next to a resource and whose livelihoods directly depend upon it are more concerned about sustainable land use and management than governments or remote organizations. Advocates of CBNRM contend that it brings the best expectations for fulfilling conservation goals while enhancing the position of impoverished rural communities who are often deprived of the fundamental right to substantive participation in decisions that impact their well-being and livelihoods (Ramaano, 2008). Arguments in favor of CBNRM combine environmental sustainability, social justice and development efficiency with assertions about practicality and good sense (Lynch and Talbott, 1995; Ramaano, 2021d, e).

Lynch and Talbott (1995) acknowledged that the evidence for the efficacy of CBNRM in achieving combined livelihood and conservation goals was both communicative and inconclusive. Colchester (1994) was careful to point out the dangers of “lairds: the co-optation, corruption and undemocratic tendencies of traditional leaders, not least when their communities got granted (or restored) rights in land, and carefulness that new democratic community institutions would need to control such ensued end surpluses. The CBNRM concept primarily takes place on communal land and has relevance for sustainable tourism development on commonages set aside for community use but owned by municipalities. Wyk (2007) postulated that it is imperative to draw up a specific set of inter-departmental guidelines for working with historically disadvantaged people who manage resources communally and have traditional knowledge and should be able to contribute to planning and resource management processes (DEAT, 2003; Ramaano, 2019). The subsequent section presents the study area and methods.

Study area and methods

Location and attributes

Musina Municipality is a subdivision of the Vhembe District Municipality and located in the far north-eastern part of the Limpopo Province, bordering Zimbabwe in the north and Mozambique in the east through the Kruger National Park. It is situated around Musina town and adjacent to the Thulamela Municipality on the far north (Musina Municipality, 2019; Ramaano, 2019, 2021a-f). Accordingly, Figure 1 depicts the location of the study area.

The area is rich with natural beauty, including the Mountain Fynbos, sacred forests and centuries-old baobab trees. Plate 1 shows a marula tree (*sclerocarya birrea*) with an old beehive (Musina Municipality, 2019; Ramaano, 2019) and Plate 2 shows *mbuyu* fruits from the baobab (*adonsia digitata*) tree. There are extensive areas within Musina that are protected and include the other sides of Kruger National Park (Vhembe District Municipality, 2017). Musina Municipality is also associated with Mapungubwe National Park and is a World Heritage Site (Musina Municipality, 2011; Ramaano, 2021a) and Plate 3 shows “the big baobab” tree of the Big Tree Nature Reserve in the dry season.

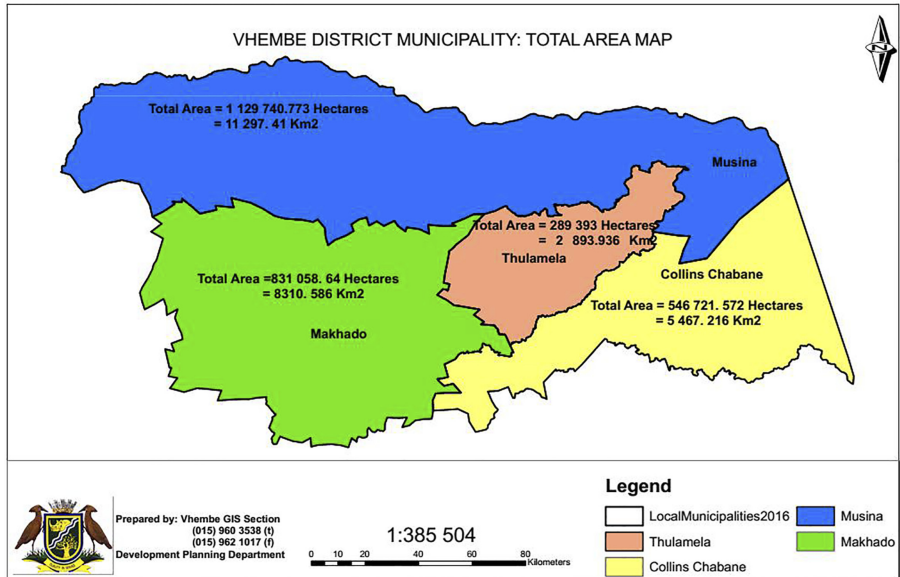


Figure 1.
The location of Musina Municipality

Source(s): Vhembe District Municipality (2017), Ramaano (2021a, b, c, d, e, f)

Plate 1.
Showing old disappearing hive for honey called “Done” in marula “*Sclerocarya birrea*” tree base



Source(s): Field work, 2019

The potentials for forestry, CBNRM, CBT and livelihoods advancement activities
 Ramaano (2019) indicated that the area has plenty of significant indigenous species mainly represented by populations of marula trees, baobab trees and mopani trees (*colophospermum mopane*), amongst many other species. The referred species are both within the specific conservancies in Musina and the Big Tree Nature Reserves and scattered around communal villages” vegetation. Therefore, such significant indigenous species are already in use for various commodity and commercial values and can be amplified into more reliable CBNRM



Source(s): Field work, 2019

Plate 2.
Showing “*Mbuyu*”
fruits from the majestic
Baobab “*adonia*
digitata” tree



Source(s): Field work, 2019

Plate 3.
Showing “*the Big*
Baobab “*adonia*
digitata” tree of the Big
tree nature reserve in
dry season

and forestry projects to capitalize on their food, juice and textile values, e.g., products from their fibers, fruits and edible worms, as well as cosmetic commodities from the baobab trees (Ramaano, 2021a, b). Dana (1993) necessitated the role of public policy in creating an environment favorable to entrepreneurship. With a policy in place, tourism could create a market for these resources and a community development platform for residents as entrepreneurship generates revenue and diminishes unemployment (Dana, 2001). The tourism potential of rural regions serves as a source of entrepreneurship possibilities that can improve regional development (Dana *et al.*, 2014). Nyaupane and Thapa (2006) asserted that tourism development and associated environmental consequences are apparent in many countries as populations strive to determine an optimal equilibrium between business and conservation but Nyaupane and Poudel (2011) postulated that the connection between biodiversity conservation and tourism is complicated. At times, biodiversity conservation

and tourism seem to be interconnected, and in different circumstances, they can appear contentious. The preservation of sustainable ecosystem services is crucial for human survival and ecosystem services degeneration is a prevalent event worldwide that leads to dismal ecosystem services (Wu *et al.*, undated). Therefore, there could be a need for a careful indigenous and biological resources community development strategy in the study area. Furthermore, the study area has abundant biodiversity embedded within the appealing mountains where the Dambale and Domboni villages are located. The other CBNRM and tourism potentials in the study area are in the Gumela Mountains and include hidden waterfalls, the Folovhodwe Tshaluwi Fountain, and rural campsites that support heritage, ecotourism, and cultural tourism possibilities. There is an abundance of community-based natural resources potential attributed to its variety of tourism forms and natural biodiversity. According to Ramaano (2019), the study area has plentiful cultural and artwork products and tourism could, therefore, also assist in utilizing them as products, as well as horticulture and permaculture, as these activities could be secondary sources of revenue (Ramaano, 2021c). Agritourism and sustainable tourism developments may collaborate to improve livelihoods and influence environmental sustainability.

Data and methods

The methods utilized in this study concentrated on the potential in using tourism in promoting indigenous resources for community development in Musina Municipality, Limpopo, South Africa. The study employed a mixed-methods design using quantitative and qualitative surveys, as they gave legitimate, informative statements. All the ethical research procedures were considered and permissions were granted by both the university and the sampled villages’ authorities. The study also employed purposive sampling, and both questionnaires and focus group discussions were applied as the primary research methods. A purposive sample is a non-probability sample that is selected based on the characteristics of a population and the objective of the study. The reason for choosing this type of sampling was because the researcher believed a representative sample could be obtained by using sound judgment, which would result in saving time and money (Patton, 2001, 2021a-f).

Sample size calculation and justification of the study

The sample size was calculated using Taro Yamane’s formula. Thus, $n = N/(1 + Ne^2)$, where n is the sample size, N is the population size and e is the precision level. The presented study area includes Folovhodwe, Gumela, Tshipise and Zwigodini villages in the Musina Municipality which has a population of 4,947 and are close to various tourism ventures such as the Beria Madzonga resort, the Big Tree holiday accommodation, Manalani Lodge, Nwanedi Nature Reserve and Resort, Luphephe Dam and the Big Tree Nature Reserve, amongst others (Table 1). The reasons for choosing these four villages were due their

Villages	Population	Calculation formula and percentages	Sample size allocation of questionnaires per villages
Folovhodwe	2,806	$57\% \times 370 = 210.9$ (Rounded to 211) = 211	211
Gumela	383	$8\% \times 370 = 29$	29
Tshipise	1,052	$21\% \times 370 = 77.7$ (Rounded to 78) = 78	78
Zwigodini	706	$14\% \times 370 = 51.8$ (Rounded to 52) = 52	52
Total	4,947	100%	370

Table 1. Selection of villages and calculation of sample size

Source(s): Ramaano’s field data (2019) and Ramaano (2021a, b, c, d, e, f, g)

locations around the conserved areas and potential for tourism entities and ventures. The sampling precision was at 5% (i.e. $e = 0.05$), and the sample size of the study area was about 370. [Table 1](#) also shows the allocation of questionnaires within the selected villages in the Musina municipal area. [Plate 4](#) shows mopani worms (*gonimbrasia belina*) in a mopani tree base inside the Musina Nature Reserve and [Plate 5](#) shows ethnic-cultural products with traditional drums, corn grinders, baskets, and wood plates created from the wood trees and



Source(s): Field work, 2019

Plate 4.
Showing Mopani
worms "*Gonimbrasia
belina*" in mopani
"*Colophospermum
mopane*" tree base



Source(s): Ramaano (2008)

Plate 5.
Showing indigenous
cultural products with
wood drums, brooms,
and traditional corn
grinders created from
forestry resources in
Musina Municipality

biodiversity in Musina Municipality. A manifest embodiment of indigenous forestry resources and commodities essential for entrepreneurship, tourism profits for livelihoods, and the development of the local communities.

Data was collected using primary and secondary methods as per the design of the study. Accordingly, data was collected through: (1) questionnaires ($n = 370$), (2) focus group discussions (five interviewees per four sampled villages) ($n = 20$) and (3) field observations (undertaken around the same time with the survey and focus group). As a result, variable data from local communities was acquired. Various participants preferred different times of the day for meeting sessions, and influenced mornings and afternoons slots where the mornings were reserved for closer fields, and those further away partook in midday surveys. Questionnaire surveys were created to acquire the main content of the study but focus group discussions and field surveys were undertaken to supplement questionnaire data.

Primary sources such as eyewitness accounts of an event were achieved (Esterberg, 2002; Ramaano, 2019, 2021a). Minton (2013) asserted that secondary data entails data that is already useable. Accordingly, secondary data was associated with the data accumulated previously for other projects and not broadly distributed. For this study, the secondary data was significantly sourced from the general review of specific literature. Both quantitative and qualitative data analyses were utilized by applying spreadsheets, Microsoft Excel, cross-tabulation analysis and manual arrangement of focus group discussions data.

Types of the required data and their purpose

Data on the general availability of significant indigenous species and resources in Musina Municipality was vital. As such, data on the indigenous resources and their implications to tourism and communities was collected and considered essential to assess how actual and potential significant species and resources could form synergies with tourism development initiatives in advancing the welfare of the local communities. The next section presents the results and discussions.

Results and discussions

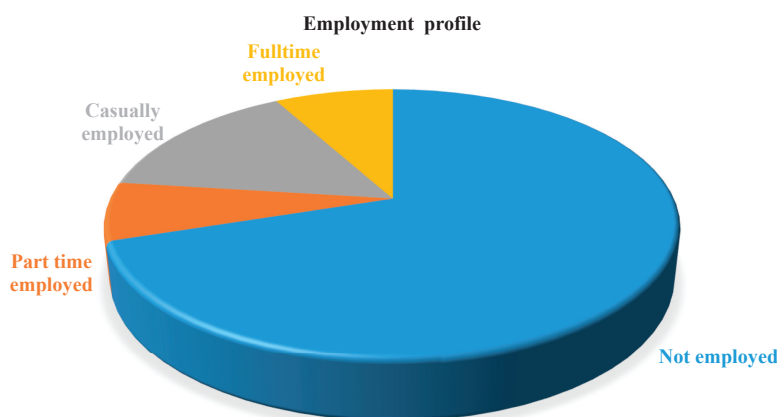
The demographics of the respondents within the households in the study area

Questionnaire indicated that 46% of respondents were females and 54% were males ($n = 370$). The majority of respondents were in the age group of 20–46 (50.8%). There was an aggregate number of 35% of the respondents in the 46–65+ age group. About 21% of the respondents had acquired tertiary education, 33.7% had secondary level and 33.7% obtained primary level, while 11.6% lacked any formal education (Ramaano, 2019). Through tourism benefits, the disparities between gender and age groups could potentially shrink as tourism can create jobs for both males and females of different age groups in the study area. In the presence of a healthy relationship between private agencies and local communities, tourism profits could sponsor university students within the host communities (Ramaano, 2019).

Employment profile of the respondents

Respondents in the Musina Municipality area were asked to provide their employment profiles to observe their day-to-day challenges and to ascertain if standard of living was generally linked with employment status. Data in Figure 2 illustrates the respondents' employment profiles in Musina Municipality area. Data indicated that 69.7% of the respondents in the area were not employed and were prone to impoverishment within the communities ($n = 370$). The questionnaires were distributed among the four sampled villages between the morning of 1 March to the afternoon of 30 April 2019 and were collected between morning of 15 May to the afternoon of 15 June 2019.

Most participants depended on a lifestyle that was less expensive and more affordable and most directly relied on the unregulated exploitation of natural resources as a source of



Source(s): Ramaano field data, 2019

Figure 2. Employment profile in Musina municipal area

income. This was evident during the field observation where the researcher witnessed degraded landscapes due to the communities sourcing out resources such wood for fuel as well as scouring areas uncontrollably for land suitable for cultivation. There is the possibility that sustainable tourism could neutralize such overexploitation of natural and significant indigenous resources through regulated tourism benefits. With regards to employment, 7% of the respondents were employed part-time, 15% were casually employed, while only 8% were employed full-time. This lack of employment could mean that locals may be able to choose a lifestyle that may not be entirely dependent on natural resources in the future.

Survey responses on having any significant indigenous tree and plant species for different basic uses, including tourism in their area

Findings in Table 2 illustrate that a total of five respondents answered “No” to having any significant indigenous tree and plant species for a variety of usages, such as tourism value, in their area but the majority (365 respondents) were cognizant of the availability of significant indigenous tree and plant species in their area. Thus, only 1.3% of respondents said “No” while, 98.6% said “Yes” to the presence of valuable and significant trees and plant species

		Section B, Q10 (a) Do you have any significant indigenous tree and plant species for different basic use including tourism?		
		No	Yes	Total
Gumela	Count	5	24	29
	%	17.2	82.7	100.0
Folovhodwe	Count	0	211	211
	%	0.0	100.0	100.0
Tshipise	Count	0	78	78
	%	0.0	100	100.0
Zwigodini	Count	0	52	52
	%	0.0	100.0	100.0
Total	Count	5	365	370
	%	1.3	98.6	100.0

Source(s): Survey by Ramaano (2019)

Table 2. Survey data on having any significant indigenous tree and plant species for different basic uses including tourism

($n = 370$). Questionnaire survey was distributed within the four sampled villages between the morning of 1 March to the afternoon of 30 April 2019 and collected between morning of 15 May to the afternoon of 15 June 2019.

The same table shows the abundance of significant biodiversity within the study area to advance the local economy within it. Broadly, significant trees or plants species have various valuable usages, ranging from tourism to material values. The synergy of assorted tree and plant species are incorporated in this study have the potential to solidify the potential tourism strategy and to develop local communities both socially and economically. Activities such as cultural tourism, ethnic tourism and heritage tourism can join the material and economic value of significant indigenous species and resources while improving local communities' livelihoods. In this regard, tourism can act as a catalyst and variable of economic development within the rural communities and the study area. Significant indigenous trees and plant species possess the potential to provide food, fruits and artistic material bases, offering potential tourists and local citizens a platform to generate tourism by themselves, without linkages to any other secondary interests. For example, medicinal herbs and plants such as the aloe vera (*aloe barbadensis miller*) species can attract both adventure and medicinal tourists, and species diversities within orchards have the potential to attract agricultural tourists.

In addition, majestic trees such as baobabs are the most well-known and the most visited by eco-tourists and adventure tourists in Limpopo Province. The tourism strategy in rural areas and the study area has a significant ground to explore while looking for a better alternative tourism strategy for sustainability. Trees such as the marula influence domestic tourism through festive and social assemblages and the traditional beer made from the marula fruits. The beer has potential for financial gains to the local communities, and already sustains an income from domestic tourists. In addition, baobab trees have fruits and seeds of significant commercial value, due to it being used in certain cosmetics oils from their seedlings. An endorsement of these products in conjunction with tourism would constitute beneficial exploration and sustainable exploitation of other similar prospective species in Musina Municipality, the study area and potentially elsewhere from a global perspective (Maikhuri *et al.*, 1994; Ramaano, 2019). For instance, significant species such as baobabs, marula and mopani trees all bear edible worms per specific seasons and can influence regional and domestic tourists to either explore alone or with local guides, with women having an advantage as older women tend to gather the edible worms. The mopani worms (*gonimbrasia belina*) are the most renowned and preferred as part of the traditional insect food cuisine in southern Africa. Thus, indigenous resources in rural areas could include culinary tourism and be significant in improving and marketing destination areas (Okumus *et al.*, 2013). All the species have the potentials for beehives as they are the preferable choice of certain honey-making bees, especially the marula trees which host a bee-like species that make honey similar to that of common bees, called *done* in the Tshivenda language (Plate 1). The mopani trees are found by their specific tiny fly species called *mbongolane* also produce tasty honey the locals call *mbani* (Plate 4). The popular baobab trees are commonly preferred by bees (*apis mellifera scutellate*) for their cavities for reproduction and the making of valuable honey. Generally, all the species have significant roles in storing rainwater that the local community sparingly use to harvest during dry conditions (Ramaano, 2019). Again, all these species produce edible materials. The baobabs have fruits called *mbuyu* and the entrepreneurial potential for the locals. Marula trees also produce marula fruits that are eaten both raw or cooked.

Mopani trees bear snacks enjoyed by locals called *mabote* on their leaves and are another prospective draw for food tourists. Moreover, all the species are the most favored in producing fibers useful in creating different commodities such as traditional ropes *Nnzi* or baskets *Zwidani*. Therefore, their ingredients, including leaves, roots, and barks, are

profound for reared livestock forage, traditional home remedies, and human consumption. A strategy that looks for the synergies amongst these meaningful species and resources, conservation management and tourism advances could be resourceful to the community, e.g. participatory forest management that focuses on the domestications of these integral species is crucial. Hence, various actual and potential values could be incorporated into rural areas for local economic development and advancement of community livelihoods (Ramaano, 2019). Significant species in the study area have the potential to determine as well as be determined by tourism (Ramaano, 2021a). For example, manufacturing based on processing and marketing local products such as oils, fibers and traditional juices from baobab trees and fruits could be successful among the respective rural communities and residents would have both tourism as well as autonomous economic value from selling of these products nationally and possibly internationally eventually.

Focus group discussion data on having any significant indigenous tree and plant species for different basic uses, including tourism in their area

Data in Table 3 shows that 95% of respondents from focus group discussions responded positively about the availability of such significant species, indicating analogous responses to that of the survey data (n = 20). Focus group discussions within all the sampled villages in the mornings and afternoons of 17–20 March 2019. The attitudes were also visible from physical observation, and independently and meaningfully corroborated the validity of data (Ramaano, 2019). Thus, Ramaano (2021a) uncovered that such significant indigenous species have tourism potential, together with agricultural and heritage sites.

Survey responses on the kinds of significant indigenous tree and plant species in the study area

Data in Table 4 shows that a total of 156 respondents picked marula trees as the foremost significant indigenous tree and plant species in the study area. A total of 103 respondents preferred baobab trees, 82 respondents mopani trees, whereas 19 respondents favored aloe vera plants. Therefore, an overall total of only 4 respondents preferred acacia trees (*Vachellia*), while 6 respondents selected “None”; consequently, there were no replies for the “Others” group category. Conclusively, data in the table demonstrates that four species categories of respondents were dominant with 42.1% of respondents for marula trees and 27.8% for baobab trees. The table also registers 22.1% for mopani trees and, lastly, 5.1% for aloe vera plants. While 1.0% represents the lowest number for acacia trees, apart from 0.0% for “None” responses (n = 370). Questionnaire survey was distributed within the four sampled villages

Focus group discussion Q3 (a) Do you have any significant indigenous tree and plant species for different basic use including tourism?

		No	Yes	Total
Gumela	Count	0	5	5
	%	0.0	100.0	100.0
Folovhodwe	Count	0	5	5
	%	0.0	100.0	100.0
Tshipise	Count	0	5	5
	%	0.0	100.0	100.0
Zwigodini	Count	1	4	5
	%	20.0	80.0	100.0
Total	Count	1	19	20
	%	5.0	95.0	100.0

Source(s): Focus group discussions by Ramaano (2019)

Table 3. Focus group discussion data on having any significant indigenous tree and plant species for different basic uses including tourism

distributed between the morning of 1 March the afternoon of 30 April and collected between the morning of 15 May to the afternoon 15 June 2019). As already designated, material values are vital for objectives such as arts and crafts as they are a well-known tourist purchase and a guaranteed generation of income for local communities, e.g. selling of mopani worms. In addition, medicinal discoveries and commodities from aloe vera species are amongst other benefits and utilities (Ramaano, 2019, 2021a).

Focus group discussion data on the kinds of significant indigenous tree and plant species in the study area

Data in Table 5 indicates a balanced response with 30% representation each from the marula and baobab trees, followed by 20% for the mopani trees. This response is supportive of the data acquired during focus group discussions within all the sampled villages in the mornings and afternoons of 17–20 March 2019. Likewise, physical observation showed the same outlook on the nature of significant indigenous trees and plant species within the study area. In various instances, pictures are examples (Plates 1-4).

Survey responses on getting socio-economic benefit from indigenous trees and plant species

Data in Table 6 shows that 33 respondents acknowledged being against receiving benefits from the use of indigenous trees and plant species in their area. The majority of 337

Table 4. Survey responses on what are the significant indigenous tree and plant species in your area

		Section B, Q10a(i) show us, what they are below								
		Marula tree	Aloe plants	Mopani trees	Baobab trees	Acacia trees/shrubs	Others (specify)	None	Total	
Gumela	Count	10	1	11	1	0	0	6	29	
	%	34.4	3.4	37.9	3.4	0.0	0.0	20.6	100.0	
Folovhodwe	Count	99	18	40	53	1	0	0	211	
	%	46.9	8.5	18.9	25.1	0.4	0.0	0.0	100.0	
Tshipise	Count	25	0	17	33	3	0	0	78	
	%	32.0	0.0	21.7	42.3	3.8	0.0	0.0	100.0	
Zwigodini	Count	22	0	14	16	0	0	0	52	
	%	42.3	0.0	26.9	30.7	0.0	0.0	0.0	100.0	
Total	Count	156	19	82	103	4	0	6	370	
	%	42.1	5.1	22.1	27.8	1.0	0.0	1.6	100.0	

Source(s): Survey by Ramaano (2019) and Ramaano (2021a)

Table 5. Focus group discussion data on what are the significant indigenous tree and plant species in your area

		Focus group discussion 3(a) (i) If yes, please specify the major indigenous tree and plant species in your area?					
		Marula tress	Mopani tress	Aloe plants	Baobabs tress	Others	Total
Gumela	Count	2	1	1	1	0	5
	%	40.0	20.0	20.0	20.0	0.0	100.0
Folovhodwe	Count	1	2	1	1	0	5
	%	20.0	40.0	20.0	20.0	0.0	100.0
Tshipise	Count	1	1	1	2	0	5
	%	20.0	20.0	20.0	40.0	0.0	100.0
Zwigodini	Count	2	0	1	2	0	5
	%	40.0	0.0	20.0	40.0	0.0	100.0
Total	Count	6	4	4	6	0	20
	%	30.0	20.0	20.0	30.0	0.0	100.0

Source(s): Focus group discussions by Ramaano (2019)

respondents responded to be open to receiving some benefits from the use of indigenous species. Only 8.9% of respondents answered “No” while 91.1% said “Yes”.

Thus, data in Table 6 implies there should be actions and safety measures, including conduct, in and for the communities to permit them to draw benefits from natural resources without overusing them. Activity such as ecotourism promotes the utilization of natural resources to benefit the environment and the local communities, but it must be balanced to be effective.

Focus group discussion data on getting socio-economic benefit from indigenous trees and plant species

Accordingly, Table 7 data reveals that 90% of respondents from focus group discussions replied “Yes” to profits from the indigenous trees and plant species available within their area. Only 10% who responded “No” ($n = 20$) during focus group discussions within all the sampled villages in the mornings and afternoons of 17–20 March 2019. It was a positive indicator as tourism could strategically merge with the importance of such species, e.g. harnessing baobab trees for various values ranging from tourism to cosmetic oils, amongst others (Ramaano, 2019). In his study on tourism prospects for livelihood improvement in local communities, Ramaano (2021a) revealed the high economic value of the species, alongside their food, arts and crafts, and tourism qualities.

Villages	Section B, Q10(c) Do you get any socio-economic benefit from such activities?			Total
		No	Yes	
Gumela	Count	18	11	29
	%	62.0	37.9	100.0
Folovhodwe	Count	9	202	211
	%	4.2	95.7	100.0
Tshipise	Count	4	74	78
	%	5.1	94.8	100.0
Zwigodini	Count	2	50	52
	%	3.8	96.1	100.0
Total	Count	33	337	370
	%	8.9	91.0	100.0

Table 6. Survey responses on getting socio-economic benefit from indigenous trees and plant species

Source(s): Survey by Ramaano (2019)

	Focus group discussion Q3 (b) Do you get any socio-economic benefits from indigenous trees and plant species?			Total
		No	Yes	
Gumela	Count	1	4	5
	%	20.0	80.0	100.0
Folovhodwe	Count	0	5	5
	%	0.0	100.0	100.0
Tshipise	Count	0	5	5
	%	0.0	100.0	100.0
Zwigodini	Count	1	4	5
	%	20.0	80.0	100.0
Total	Count	2	18	20
	%	10.0	90.0	100.0

Table 7. Focus group discussion data on getting socio-economic benefit from indigenous trees and plant species

Source(s): Focus group discussions by Ramaano (2019)

Survey responses on how significant use of indigenous tree and plant species contribute to their socio-economic benefits and daily life basic needs

Data in Table 8 reveals that a total of 30 respondents replied “None” to socio-economic gains from the use of significant indigenous tree and plant species and their supplement to daily life basic needs, as just 1 respondent responded “Significantly” and another 1 “Very significantly”. The majority, 338 respondents in total, indicated they were “Insignificantly” receiving socio-economic benefits and enrichment to their basic needs from the significant indigenous tree and plant species in the study area. Accordingly, 8.1% of respondents indicated “None”, 0.2% registered “Significantly” and “Very significantly”, whereas 91.3% stated “Insignificantly” to receiving socio-economic benefits from the use of significant indigenous tree and plant species, hence, their contribution to daily life basic needs ($n = 370$). Questionnaire survey within the four sampled villages was distributed between the morning of 1 March to the afternoon of 30 April 2019 and collected between morning of 15 May to the afternoon of 15 June 2019).

As such, data in the Table suggested that the species are not currently contributing as efficiently to benefit of the local area. A good tourism strategy within the study area should harness contributions from these major species for a mutual benefits in economic pursuits (Ramaano, 2019).

Focus group discussion data on how significant use of indigenous tree and plant species contribute to their socio-economic benefits and daily life basic needs

Similarly, respondents from the focus group discussions helped by implementing similar responses about how indigenous trees and plant species provide for their socio-economic interests and daily life basic needs. Accordingly, data in Table 9 asserts that only 5% of respondents indicated significantly benefiting from such species which implied that much is required to consolidate these species into a propitious activity by blending them with tourism. This is the significant proposition of this study and its addition to scholarly knowledge $n = 20$. The focus group discussions within all the sampled villages took place in the mornings and afternoons of 17–20 March 2019.

Respondents’ responses on how the contribution of cultural activities to their socio-economic benefits and daily basic needs

Data in Table 10 shows that a total of 305 respondents replied” “None” to socio-economic benefits from cultural activities and their activities supplemented the basic needs of their

Section B, Q10(c) (i) Indicate how do they contribute to your socio-economic benefits and daily life basic needs?

		None (nothing at all)	Insignificantly (not enough)	Significantly(enough)	Very significantly (more than enough)	Total
Gumela	Count	13	14	1	1	29
	%	44.8	48.2	3.4	3.4	100.0
Folovhodwe	Count	10	201	0	0	211
	%	4.7	95.2	0.0	0.0	100.0
Tshipise	Count	5	73	0	0	78
	%	6.4	93.5	0.0	0.0	100.0
Zwigodini	Count	2	50	0	0	52
	%	3.8	96.1	0.0	0.0	100.0
Total	Count	30	338	1	1	370
	%	8.1	91.3	0.2	0.2	100.0

Source(s): Survey by Ramaano (2019) and Ramaano (2021a)

Table 8. Survey responses on how significant use of indigenous tree and plant species, contribute to their socio-economic benefits and daily life basic needs

lives. and only 1 respondent replied “Very significantly”. The majority of 64 respondents designated “Insignificantly” to receiving any socio-economic benefit and contribution to their necessities from cultural pursuits and 82.4% of respondents stated “None”. Hence, 0.20% registered “Very significantly” while 17.2% showed “Insignificantly” to gains from cultural exercises ($n = 370$). Questionnaire survey within the four sampled villages were distributed between the morning of 1 March to the afternoon of 30 April and collected between the morning of 15 May to the afternoon of 15 June 2019.

Consequently, the table signifies that cultural enterprises within the study area have not been tapped into to promote livelihoods. Cultural resources are a fundamental element of cultural tourism, which is commonly one of the prominent tourism practices in various rural regions and a latent economic venture in rural districts (Ramaano, 2019). It is quintessential to prioritize the cultural resource foundation for the envisioned tourism plan for spurring local community advancement in the study area.

Focus group discussion 3(b) (i) If yes, please specify and explain the benefits levels of such indigenous tree and plant species to socio-economic status and daily basic needs

		None (nothing at all)	Insignificantly(not enough)	Significantly(enough)	Very significantly (more than enough)	Total
Gumela	Count	0	5	0	0	5
	%	0.0	100.0	0.0	0.0	100.0
Folovhodwe	Count	0	5	0	0	5
	%	0.0	100.0	0.0	0.0	100.0
Tshipise	Count	1	4	0	0	5
	%	20.0	80.0	0.0	0.0	100.0
Zwigodini	Count	0	4	1	0	5
	%	0.0	80.0	20.0	0.0	100.0
<i>Total</i>	Count	1	18	1	0	20
	%	5.0	90.0	5.0	0.0	100.0

Source(s): Focus group discussions by Ramaano (2019)

Table 9.
Focus group discussion data on how significant use of indigenous tree and plant species, contribute to their socio-economic benefits and daily life basic needs

Section B, Q9 (i) How do they contribute to your socioeconomic benefits and daily basic needs?

		None (nothing at all)	Insignificantly(not enough)	Significantly(enough)	Very significantly (more than enough)	Total
Gumela	Count	19	9	0	1	29
	%	65.5	31.0	0.0	3.4	100.0
Folovhodwe	Count	174	37	0	0	211
	%	82.4	17.5	0.0	0.0	100.0
Tshipise	Count	71	7	0	0	78
	%	91.0	8.9	0.0	0.0	100.0
Zwigodini	Count	41	11	0	0	52
	%	78.8	21.1	0.0	0.0	100.0
<i>Total</i>	Count	305	64	0	1	370
	%	82.4	17.2	0.0	0.20	100.0

Source(s): Survey by Ramaano (2019)

Table 10.
Survey responses on how are the contribution of cultural activities to their socio-economic benefits and daily basic needs

Focus group discussion data on the contribution of cultural activities to their socio-economic benefits and daily basic needs

Data in [Table 11](#) exhibited that 95% of respondents from focus group discussions registered an insignificant contribution of cultural activities to their socio-economic perks and daily essentials within the area ($n = 20$). Focus group discussions took place within all the sampled villages between 17–20 March 2019 ([Ramaano, 2019](#)). Hence, [Figure 4](#) manifests the visualized theoretical conceptualization of sustainable tourism and sustainable community livelihoods in the study area.

Conclusions and recommendations

Apart from questionnaire surveys and field observations. Five (5) local community members per sampled villages engaged in focus group discussions. The study findings indicated from all the data collection methods that there are abundant significant indigenous resources in the area that can merge with tourism resources. The study also showed that the study area in Musina Municipality is rich with various indigenous trees and plant species and better tourism potentials with activities that ranged from existing to potential. There are also socio-economic benefits of indigenous species, resources and cultural products to the communities and [Ramaano \(2019\)](#) highlighted tourism potential in the study areas’ agricultural sites, arts and crafts, indigenous plants, tree species and natural heritage resources. The study area does not currently benefit from sustainable tourism and alternative tourism development ([2021a-c](#)). Cumulative data from all collection methods showed that indigenous trees and plant species are not empowering the local communities enough at this stage. Just as [Dana \(1990\)](#) postulated, government policy performs a decisive function in regulating economic advancement, and its precise enforcement could substantially assist the communities as they set up a local specialized tourism industry.

[Ramaano \(2019\)](#) discovered that collaborations between local communities, government and non-governmental organizations dealing with rural and sustainable tourism were well-reviewed and endorsed potential strategies for administering tourism development in the study area. It was evident that there is a vital need to bring forth an integrated tourism advancement and management strategy in the usage and conservation of indigenous tree and plant species in the study area. Indigenous communities everywhere in the world experience

Focus group discussion 8(b) (ii) If yes, please specify and explain the benefits levels of such cultural activities to socio-economic status and daily basic needs

		None (nothing at all)	Insignificantly(not enough)	Significantly(enough)	Very significantly (more than enough)	Total
Gumela	Count	0	5	0	0	5
	%	0.0	100.0	0.0	0.0	100.0
Folovhodwe	Count	0	5	0	0	5
	%	0.0	100.0	0.0	0.0	100.0
Tshipise	Count	1	4	0	0	5
	%	20.0	80.0	0.0	0.0	100.0
Zwigodini	Count	0	5	0	0	5
	%	0.0	100.0	0.0	0.0	100.0
Total	Count	1	19	0	0	20
	%	5.0	95.0	0.0	0.0	100.0

Source(s): Focus group discussions by [Ramaano \(2019\)](#)

Table 11.
Focus group discussion on the contribution of cultural activities to their socio-economic benefits and daily basic needs

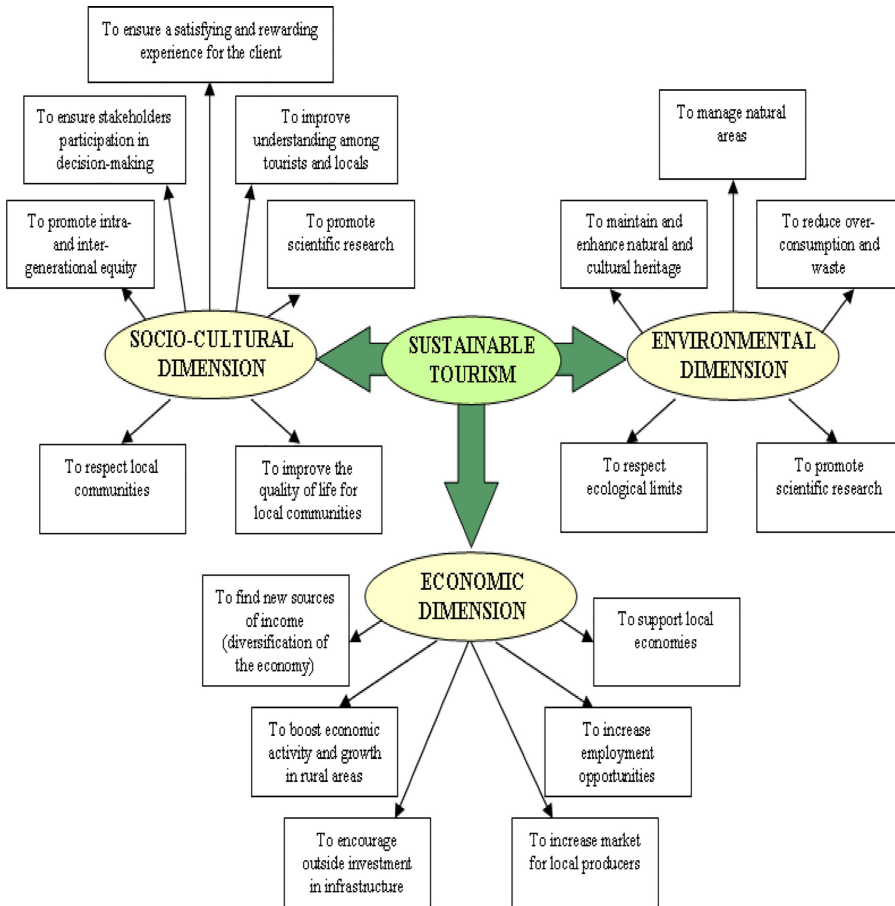


Figure 3.
Principles of sustainable tourism

Source(s): White *et al.* (2006), Zamfir *et al.* (2017), Ramaano (2019, 2021a, b, c, d, e, f)

chronic economic deficiency, lower education levels and diminished health. Akin to the *practical implications* envisaged by this examination, entrepreneurship, indigenous resources-bound community development and decent economic assistance could complement each other (Peredo *et al.*, 2004) and be paramount in enriching the livelihoods of the local community within the area. Maikhuri *et al.* (1994) stated that there should be a mechanism to tap into the various use of wild fruit in the Garhwal Himalayas to sustain the local communities and improve their livelihoods. However, this study and its *theoretical implications* partially support this research as it takes the perspective of appreciating the unique nature of tourism and extending it further toward indigenous resources and general sustainability in the study area, which is a significant contribution to academic knowledge. The *limitation of this study* resides in the sole usage of Microsoft Excel and cross-tabulation analysis. The reliability of its findings stood firm even though the outcomes might not have developed the last tourism strategy on the basis of this study, as stated in the section about the potentials for using tourism in promoting indigenous resources for community development in the study area. It has nonetheless provided a conducive environment and

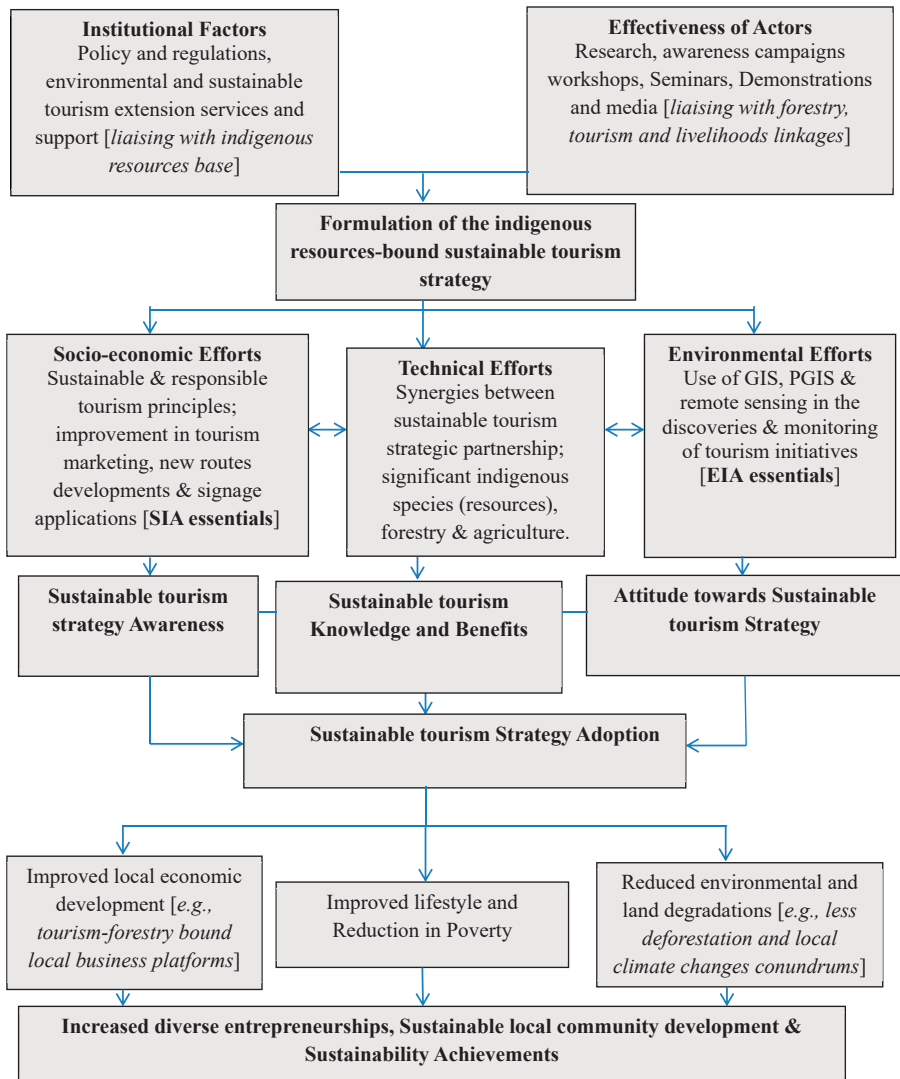


Figure 4.
The Researcher's
envisaged effective
sustainable tourism
and sustainable
community livelihoods
strategy and model

Source(s): Author's own; adapted from Ramaano (2019, 2021a, b, c, d, e, f, g)

platform for such a potential strategy from its findings (Ramaano, 2019, 2021a). Along with *further studies implications*, additional research might adopt different analysis software and approaches, such as those spelled out by Bennett *et al.* (2012) when they appraised a capital assets structure for valuing and developing potential for tourism improvement in Aboriginal protected area gateway neighborhoods.

Along with the study's *recommendations*, Figure 3 presents the adopted sustainable tourism principles and model from Zamfir *et al.* (2017), White *et al.* (2006) and Ramaano (2019). Figure 4 represents the researchers envisaged theme of sustainable tourism and sustainable community livelihoods in the study area and the study contends for firm adherence and application of sustainable tourism ideals in the study area, as demonstrated in Figures 3 and 4

is linked with the study's outcome and borrowed its core theme of sustainable tourism paragon from Figure 4. It establishes that the effectiveness of factors, including policy and regulations alongside the role players such as researchers and media, can fortify tourism prospects and community development in rural areas.

A formulation of tourism (indigenous resources policy) strategy should bear significant socio-economic and social impact assessment (SIA) ideals, and technical and environmental efforts and environmental impact assessment (EIA) ideals in the study area. Hence, tourism marketing, new routes establishment, synergies between sustainable tourism strategic partnership and prioritization of geographic information systems (GIS), participatory geographic information systems (PGIS) and remote sensing in the discoveries and monitoring of tourism initiatives could be vital. Ultimately, local communities' adoption of a sustainable tourism strategy would be beneficial alongside the nature of their awareness, benefits and attitudes toward sustainable tourism. How the residents' attitudes toward encouraging community support the tourism industry needs further examination (Ryan *et al.*, 1998; Okumus *et al.*, 2015). On the positive side, the strategy's adoption could improve local economic development, reduce poverty and limit environmental degradation (Ramaano, 2019, 2021a-f) and it is possible the communities could endorse the ideals of sustainable tourism and the alternative development theory of tourism, along with the proposed basis of integrative geographical information systems in community-based natural resource management, community-based tourism, and rural initiatives (Ramaano, 2021g). Eventually, there could be tourism-based sustainable community development, sustainability, and a blueprint for future pertinent endeavors within the area. In refuting the odds and neglecting non-productive stereotypes about rural areas and their indigenous resources, this study will serve to contribute to the natural and indigenous resources and livelihoods and the academic knowledge as demonstrated by a case study that is significant for the local, provincial, and national governments as well as internationally.

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