

Mbozi Meteorite as a Niche for Community Development in Songwe Region, Tanzania

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Abstract: This study investigated the Mbozi Meteorite as a Niche for Community Development in Songwe Region, Tanzania. The study applied the cross-sectional research design where a mixed research method was applied. The population of the study was 160,529 people from the seven wards in the district. From this population, the sample size per Ward ranged from 15-30 participants making a total sample size of 135 respondents. Community members were interviewed using a semi-structured questionnaire. Focus group discussions (FGDs) comprising men, women and youths were also conducted. Quantitative data was processed using the SPSS version 21. Qualitative data was analysed thematically. Almost all of the surveyed population are aware of the Mbozi meteorite. Most of the respondents became aware of it between 2000 and 2010 with a significant proportion learning about it in school. There is a need to introduce education outreach programs that can play a crucial role in raising awareness about the significance of the Mbozi Meteorite. Furthermore, there is a need to collaborate with local tourism and cultural organizations to increase awareness and attract visitors by promoting the Mbozi meteorite as a unique tourist attraction by highlighting its historical and scientific significance. Finally, there is a need for diversifying advertising channels by utilizing traditional media platforms like Television, radio, social media, online forums and websites as well as print media, to reach a wider audience nationally and internationally.

Keywords: Mbozi Meteorites; Community Development; Astrotourism; Tanzania.

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Introduction

Understanding the costs and benefits of people living within or adjacent to Protected Areas (PA) is essential in balancing protective area goals and the needs of local populations (Karanth & DeFries, 2010). In developing countries, there is a high reliance on natural resources and local communities living in and around protected areas receive a significant portion of their income from the natural resources (Abukari & Mwaliyosi, 2020; Galvin et al., 2020, Kyando et al., 2019 and Molina Murillo et al., 2016). When local communities benefit from conservation initiatives, their interests and commitment to be active in conservation initiatives are enhanced (Mashauri, 2017; Molina-Murillo,

2016). Conservation benefits usually compensate for costs associated with living close to the protected area like restricted land use, limited infrastructural development, conflicts with wildlife, and regulatory burdens (Molina-Murillo, 2016; Nepal and Spiteri, 2011). A good relationship between Local communities and PA authorities is also needed to accelerate conservation initiatives (Kideghesho, 2008; Mashauri, 2017). Some authors have noted that when conservation addresses the needs of the surrounding communities, the costs associated with ecosystem maintenance are reduced (Lele et al., 2010; Molina-Murillo, 2016; Nana and Tchamadeu, 2014).

Since local communities have lived inside and around areas that are now protected, their engagement provides room for them to contribute ideas on how to improve conservation initiatives (Abukari & Mwalyosi, 2020; Mavah, et al., 2018). Hence, the success of conservation initiatives (Allendorf, 2020; Molina-Murillo, 2016). Numerous studies have discovered a consistent pattern whereby communities that are closest to the PA are acknowledged to profit more than those that are farther away (Croucher, 2020; Molina-Murillo, 2016; Nana and Tchamadeu, 2014). In this study, community conservation benefits refer to those that neighboring communities gain from protective area authorities as a kind of assistance, such as new schools, teaching facilities, school supplies, libraries, water projects, dispensaries, roads, etc.

The Mbozi meteorite is an ungrouped Iron meteorite found in Tanzania. It is the fourth largest and the world's most famous meteorite (commonly known as Kimondo in Swahili language) and is the most popular tourist attraction found in Songwe Region. It is reported by Mr. Halele, a local who passed away in the 1930s at the age of 90 years that the Mbozi meteorite was there before 1930 and that it has been linked with traditional beliefs. It was formally documented in 1930s by a European surveyor called William Natt. The Meteorite was under the custodianship of the Mbozi District Council until the year 2017 When it was officially handed over to Ngorongoro Conservation Area Authority (NCAA) by the government. It was anticipated that, under NCAA the meteorite would gain more prominence both locally and internationally. Thus, this study provides baseline

information as to whether the community around the Mbozi meteorite benefits socially, culturally or economically from the existence of the meteorite.

Methodology

Study Location

The area of this study was Songwe Region, Mbozi District Council in Ndolezi Ward where Mbozi meteorite is found. The study focused on the seven Wards close to where the Mbozi meteorite is found. These are Mlangali Ward, Mlowo Ward, Mahenje Ward, Hasamba Ward, Vwawa Ward, Ruanda Ward, and Nyimbili Ward. The choice of these wards is based on the fact that, they are close to where the Mbozi meteorite is located

Design

The study applied the cross-sectional research design where a mixed research method was applied involving both qualitative and quantitative data, focusing on the social, economic and cultural benefits that the community derives from the Mbozi meteorite.

Population and Sampling

The population of the study was 160,529 from the seven wards in Mbozi District. From this population, the sample size per Ward ranged from 15-30 participants making a total sample size of 135 respondents Table 1. A mix of purposeful and random sampling techniques were used to select respondents from the given population. Key informants including Government and community leaders as well as business people were selected purposefully while other respondents were selected by using a random sampling technique.

Table 1: Population and Sampling

SN	Ward	Population	Participants
1	Mlowo	66,446	30
2	Mlangali Ward	18,314	20
3	Mahenje Ward	19,781	20
4	Hasamba Ward	5,969	10
5	Vwawa Ward	26,911	25
6	Ruanda Ward	10,313	20
7	Nyimbili Ward	12,795	15
	Total	160,529	135

Source: NBS (2023)

Research Tools

Community members were interviewed using a semi-structured questionnaire. Focus group discussions (FGDs) comprising men, women and youths were conducted using a focus group discussion guide. In addition, Key informant

interviews were conducted using a key informant interview guide. All interviews were conducted ethically, voluntarily and in a confidential manner to preserve the internal validity of the findings.

Data Analysis

Quantitative data was processed and analysed using the SPSS version 21 to get descriptive statistics and to establish whether there is any relationship between the variables of interest. Qualitative data from FGDs and Key informant interviews were analysed through transcription, familiarization coding and then identified thematically.

Results and Discussion

This section presents findings from this study and is guided by research questions. It begins with the demographic characteristics of respondents.

Demographics of Respondents

Males were the majority of the respondents (61.5%) as compared to women (Table 2). The aggregation of data based on gender is deemed to be an essential aspect of research for community economic development as it helps to ensure that protective areas are designed and implemented in a way that are inclusive and responsive to the diverse needs of the community.

Table 2: Respondents' Characteristics

Item	Frequency	Percent
Gender		
Male	83	61.5
Female	52	38.5
Total	135	100
Age		
15-35	85	63.0
35-50	35	25.9
Above 50	15	11.1
Total	135	100
Education		
No Formal Education	10	7.4
Primary Education	49	36.3
Secondary Education	45	33.3
Tertiary Education	16	11.9
University Education	15	11.1
Total	135	100
Occupation		
Employed	16	11.9
Self Employed	41	30.4
Businessman/Woman	10	7.4
Farmer	60	44.4
Livestock keeping	5	3.7
Student	3	2.2
Total	135	100

Most of the respondents (63%) were young generations ranging from 15 to 35 years of age and the least participants (11.1%) were those above 50 years of age. People's attitudes and behaviour towards protected areas can vary across age groups. It is therefore important to investigate age-related differences in protected areas as these can guide in developing targeted strategies to promote a sense of stewardship among visitors and people living near the protected areas (Table 2).

Likewise, to better comprehend the participants' level of understanding, the respondents' degree of schooling was inquired. The majority of respondents (36.3%) had only primary education while 33.3% had

secondary education. The remainder had either tertiary or university education. Only a few (7%) of respondents had no formal schooling (Table 2). In addition to being closer to PA's borders, education is a key factor in encouraging local residents to participate in conservation efforts (Adroin et al., 2020) Locals with secondary education or higher were more likely to value conservation advantages than those with only primary education, and these individuals tend to value benefits more than those with no formal education (Mbise, et al., 2021). With regard to respondent's occupations, findings indicates that most respondents were farmers (44.4%) followed by 30.4% who were self-employed (Table 2). According to Galvin, et al. (2020), the type

of activity providing a living is one among the indicators of how locals appreciate benefits. Those who earn a little more money than average, have been shown to bear smaller costs associated with living closer to the PA (Croucher, 2020; Mbise, et al., 2018). However, Mbise, et al., (2021) did not find a relationship between the type of employment and the appreciation of receiving benefits.

Research Question 1: what is the general community awareness of Mbozi meteorite?

Assessing awareness helps determine whether local residents understand what a meteorite is and its significance. The Mbozi meteorite is well known as 98.5% of respondents reported that they had heard about it. More than half (52.6%) of these respondents heard about the Mbozi Meteorite in the years between 2000 and 2010 (Table 3).

Most of the respondents heard about the Mbozi meteorite in school (48.8%) followed by those who were informed by their friends (39.3%) and only 4.5% reported knowing about it through social media. Understanding how community members become aware of Mbozi meteorite can provide valuable insights into the effectiveness of various communication and outreach strategies. This will help the NCAA to refine and tailor communication strategies accordingly. According to Thetsane (2019), local community participation is one of the core elements of tourism development because it is most important to the sustainability of the tourism industry. Further, the involvement of the local community has substantial value in tourism for locals, their lifestyle and environmental, cultural and traditional factors which are the main attractions in tourism (Kummitha & Osiako, 2020).

Table 3: Awareness on Mbozi Meteorite

Item	Frequency	Percent
Ever heard of Mbozi meteorite		
Yes	133	98.5
No	2	1.5
Total	135	100
When heard for the first time		
Between 1980s-1990s	13	9.6
Between 1990s-2000s	33	24.4
Between 2000-2010	71	52.6
Between 2010-2020	18	13.4
Total	135	100
How participant knew about it Meteorite		
I was told by my friends	53	39.3
Social media	6	4.5
Radio	10	7.4
I was taught at school	66	48.8
Total	135	100
Participant understanding on what a meteorite is		
A fallen star	52	38.5
A stone	80	59.3
I don't know	3	2.2
Total	135	100

When asked whether respondents know what is a meteorite, close to two-third (59.3%) reported it to be a rock, followed by those who reported that it was a fallen star (38,5%). The variation of responses was observed, indicating that not all respondents have knowledge of precisely what a meteorite is, as supported by different participants in FGDs who commented, "Mbozi meteorite is a star that exploded and one of its part dropped in Ndolezi (this is a place where Mbozi meteorite is found" (Male-Mlowo). In the same note, another man reported, "I was taught that a meteorite is one of

the planets of the solar system." Yet another man mentioned that "a meteorite is just a piece of Iron that fell from the sky."

Participants had different opinions on what a meteorite is as explained by one respondent: "Meteorite is stone like, it is a planet that fell from the sky and turned to ice, someone saw it and told the whites who were around." Another female adult had this to say; "Our elders used to tell us it is something very heavy which dropped from the sky. One young man who was a blacksmith saw this

stone-like object and tried to cut it but he did not succeed, so he went and told his chief who also tried to cut it and failed, then he decided to tell a white man who was around, who managed to cut a piece and took it" (Female-Mahanje).

Research Question 2: What is the view of respondents on the advertisement of the Mbozi meteorite?

Nearly all respondents (97.8%) were of the opinion that there is a need to advertise the Mbozi meteorite more, in order to attract more tourists (53.4%), for community economic growth and the growth of national income (18.5%) and to improve the relationship with people from other areas (12.1%) as shown in Table 4. Advertising of this not

well-known and appreciated protected area can raise awareness, promote tourism, attract scientific research, secure funding, preserve cultural heritage, and empower local communities. In a study conducted in Arusha by Mato (2022), it was revealed that the majority of respondents were aware of the available tourist attractions in the Country due to promotion efforts made by Television Channels and only a few (0.56%) were unaware of available attraction sites with the exception of common attractions such as Mt. Meru and Mt. Kilimanjaro, Ngorongoro Crater, Serengeti and Arusha National Park. It was further reported that the unawareness of the tourist sites can be due to unavailable information especially that is prepared in a native language, Kiswahili.

Table 4: Responses on the Need for Advertisement of the Mbozi Meteorite

Item	Frequency	Percent
Whether there is a need to advertise Mbozi Meteorite more		
Yes	131	97.8
No	3	2.2
Total	135	100
Why advertise Mbozi Meteorite more		
Source of Foreign Currency	12	9.0
For community economic Growth and national income	25	18.5
To attract tourist	71	53.4
Increase investment	9	6.8
Improve relationship with people from other areas	16	12.1
I don't know	2	1.5
Total	135	100

In order to make people within and outside Mbozi to know about the Mbozi meteorite, there is a need to put more effort into advertising it in various Local, National and International media. Findings in Table 5 indicate that, 58.5% of respondents, reported a need to increase the advertisement sessions and diversify media coverage. Media coverage can significantly amplify the impact of awareness campaigns as commented by one of FGDs participants that; "Many people do not know much about Mbozi meteorite, I think advertising it through Safari Channel and other social media is very important" (Male Youth-Ndolezi).

Media sensitization focusing on schools in order to attract more schools to bring their students to learn about the Mbozi meteorite as part of their study tours was emphasized by a participant through FGDs "There is a need to sensitize schools to bring their students to come and see the meteorite as a learning experience as by investing in these students, we are going to get Meteorite ambassadors in the future" (Female Youth-Nyimbili).

Some individuals opined that awareness can be increased through annual exhibitions, conferences, sports bonanza, etc. Organizing events (sports bonanza) and exhibitions centered around the Mbozi meteorite, engages the community and visitors and creates a sense of excitement and curiosity locally, nationally and internationally. According to Saayman (2012), exhibitions and events cover a kaleidoscope of planned cultural, sports, political and business events. This can be done at various levels and it normally ends with attracting more local and international tourists.

Conferences with presentations emanating from scientific research and publications in reputable academic journals and showcasing the meteorite's unique characteristics and its contribution to astrotourism will encourage scientific research on the Mbozi meteorite. This was pointed out by a young woman from Mahanje who reported; "There is a need to commemorate Meteorite Day by having a week of exhibitions as we used to do in the past

when Madam Chiku Ngalawa was our regional commissioner” (Female- Mahanje).

Collaboration with other National and International organizations was reported by 8.2% of respondents in table 5. It is important to engage local and national organizations and institutions like government bodies, NGOs, CBOs, Universities, etc. in planning awareness campaigns among other

issues. International collaboration is also important e.g. with space science organizations and others supporting Astrotourism as this can lead to joint research projects, exhibitions and exchange programs and therefore enhance the global awareness of the Mbozi meteorite and Tanzania in general.

Table 5: What to do to make people aware of the existence of this Meteorite

Item	Frequency	Percent
Increase the advertisement sessions and diversify media coverage	79	58.5
Collaborate with other National and International organizations	11	8.2
Yearly exhibitions, Conferences, sports bonanza etc	42	31.1
Improving the Transport system (roads)	3	2.2
Total	135	100

Table 6: Response on potential economic benefit of Mbozi Meteorite

Item	Frequency	Percent
Increase Revenue for the District Council and the nation	47	34.8
Create Employment for the Local people eg tour guides, bodaboda	19	14.1
Increase income of local people through selling of commodities and so creating economic stability	43	31.9
Tourism opportunity	17	12.6
Infrastructure development (roads and museum)	9	6.6
Total	135	100

Research Question 3: What is the view of respondents on benefits derived from the Mbozi meteorite?

Regarding benefits derived from the Mbozi meteorite respondents reported a variety of benefits as follows:

Economic Benefits

Findings in Table 6 revealed that 34.8 percent of respondents recognize the contribution of the Mbozi meteorite to the increase of revenue to the Songwe District Council and 31.9% reported increased income of the local people. The presence of the Mbozi meteorite can stimulate economic development in the surrounding areas through strengthening and establishment of local businesses e.g. hotels, restaurants, souvenir shops and transportation services. Thus, designating Mbozi as a PA is expected to increase both local and international tourism. Manzoor et al. (2019) contended that economic benefits will be derived through job creation and increase in employment, resulting in people earning money and being able to take care of their families by providing food, paying bills, etc. This observation is supported by findings

of this study whereby 31.9% of respondents and 14.1% believed that promotion of the Mbozi meteorite will have positive impact on the local economy through various events and exhibitions as well as job and employment creation respectively.

A small percentage (12.6%) of respondents had a view that Mbozi meteorite being a significant natural attraction has the potential to attract tourists and researchers from all over the world. This can lead to increased tourism revenue for the local community. A male youth from FGDs commented on this by saying;

By having Mbozi meteorite around is very beneficial to the community, especially if it is advertised more and made more known. More jobs will be created and unemployed youths will be employed as bodaboda riders and they will benefit by transporting locals, visitors, and tourists (Male Youth-Mlowo).

Another female from Mlowo Ward during FGDs commented that; “In the past when Chiku Ngalawa was the Songwe Regional Commissioner, we used to have Meteorite Week in which we had exhibitions

and community members were allowed to exhibit and sell their various commodities but not anymore.”

The most important economic feature of activities related to the tourism sector is that they contribute to three priority goals of developing countries, the generation of income, employment and foreign exchange earnings (Rasool et al., 2021; Manzoor et al., 2019).

Social Benefits

The social advantages of the Mbozi meteorite are subjective and vary depending on the perspectives of different individuals. In Table 7, respondents reported benefits from the Meteorite as a tourist attraction, which brought about the improvement of social services (42.2%) like the construction of a road to the Mbozi meteorite area and the drilling of a water well as well as the improvement of schools. This finding was supported by a male youth from Mlowo who commented that;

It is due to the presence of Kimondo we now have a good road (though it needs improvements) that leads to the area where Mbozi meteorite is, and also NCAA has drilled a water well to ease the community with water challenges (Male Youth-Mlowo).

Mbozi meteorite was reported to promote social interactions between people (36.3%) including intermarriages. Normally there are differences culturally between countries and within countries. Interactions between tourists and their hosts and the understanding of the cultural norms of their host form the basis for the flourishing of the tourism industry. This was supported by a female from Mlowo Ward who commented that;

Through Meteorite celebrations which we used to have in the past, normally people from all over Songwe were invited, so it was a chance to learn traditional dances from Ileje, Momba, Songwe and Mbozi and we made new friends from different areas and who knows, this could end up in marriage.

However, 21.5 percent of respondents reported not seeing any social benefits of having Mbozi meteorite around. This is an indication that there are some misunderstandings or some issues that need to be addressed by the NCAA, especially on paying the compensation for people who willingly moved from their ancestry land to pave the way for Mbozi Meteorite protected area as reported by a male from Mlowo Ward that;

Unfortunately, I don't see the benefit of Mbozi meteorite, as the government is getting money but it is not returning to the community by building schools, electricity, Dispensary, and tarmac road....and it is taking land from our elders without compensation (Male-Mlowo).

Tanzania National Parks (TANAPA) has a community outreach Department that supervises the relationship between parks and communities living adjacent to all parks (Mbise et al., 2021). Besides monitoring the relationships, this department has a distinct budget that is distributed to the villages with support-initiated projects and social services such as water, wells, clinics, and roads (Lobora, 2016; Mashauri, 2017). By doing such initiatives, communities realize these efforts which further strengthen the relationship between communities and parks (Lobora, 2016; Molina-Murillo, 2016; Mashauri, 2017; TANAPA, 2015).

Table 7: Response on social benefits of Mbozi Meteorite

Item	Frequency	Percent
Improvement of Social Services e.g. Road, water wells	57	42.2
Promote social Interaction between people(Intermarriage)	49	36.3
No social benefits	29	21.5
Total	135	100

Cultural Benefits

Findings from Table 8 revealed that 40% of the respondents thought that by having the Mbozi meteorite, there is a promotion of traditions, culture and norms of the area. It holds immense cultural value as it is considered a sacred object by the local community. It has been revered for

centuries and holds a special place in local folklore and traditions. Its presence enriches the Region's cultural heritage. One male youth from FGDs commented the following.

We have been benefiting from the Mbozi meteorite for a very long time. For

example, we have been using it for our rituals if things are not going well or when we need something special. I went there to ask for a wife which I wanted, and I succeeded and now am happily married.

This was followed by 25.2 percent of those who thought that the Mbozi meteorite has the potential to attract visitors from around the world who are

interested in meteorites, astronomy and cultural tourism. Therefore, having it as a tourist attraction helps to make the history of local communities more known to other areas within Tanzania and to other countries. Further, the protected area can provide benefits that are less tangible including recreation, spirituality, cultural contexts, education, scientific research and monitoring (Harmon, 2004).

Table 8: Response on community Cultural Benefits

Item	Frequency	Percent
Promote traditions, culture and norms of the area	54	40
Enhance Growth of Language	8	5.9
Facilitate the protection of its History for the generation	6	4.4
Enhance expansion of History of the area	34	25.2
No cultural benefit	9	6.7
I don't know	5	3.7
Cooperation between countries	10	7.4
Enhance Culture diffusion	9	6.7
Total	135	100

Table 9: What needs to be done to make the community and nation benefit from this Meteorite

Item	Frequency	Percent
Improving infrastructures eg. To have a tarmac road	57	42.2
Proper protection of the meteorite and the area in general	7	5.2
Provide awareness education to the community	33	24.4
Advertise more in national and international media	27	20
The area to be taken care of by the District Council	5	3.7
Reducing entrance fee to locals	6	4.5
Total	135	100

It is worth noting that people living in and around PAs interact with eco-tourism as a source of revenue to support protected areas and local communities. However, ecotourism may lead to undesirable social, cultural and economic consequences. It can cause conflicts and changes in land use and land tenure rights. It can also fail to deliver promises of community-level benefits (Kruger, 2005; Stone & Wall, 2004) and might displace people from protected areas and impact local peoples' culture and sacred places (West et al., 2006).

Some literature reports that there are some deviations that occur at individual levels as such benefits are more widely appreciated at the community level (Kaaya & Chapman, 2017; Kideghesho et al, 2007). Many protected areas struggle to maintain and improve their relationship with communities given resource and land use restrictions, unequal benefit sharing, and equivocal governance approaches (McCool et al., 2012; Nana & Tchamadeu, 2014; Snyman, 2012).

Research Question 4: What can be done for the community members to rip the fruits of having the Mbozi meteorite in Songwe Region?

Respondents agreed that something needs to be done so that the community members can be able to rip the fruits of having Mbozi meteorite in Songwe Region. Improving infrastructures e.g. constructing a tarmac road was mentioned by 42.2% of respondents (Table 9). This will improve accessibility of the site with ease as it will open up connectivity with other areas, it will boost the area socially and economically and enhance the quality of life of the community.

The need for more advertisements in various national and international media was mentioned by 20% of respondents. Promoting the Mbozi meteorite is very important as it has the potential to attract tourists and visitors interested in meteorites, geology, and natural wonders. It can also stimulate interest in research on science, astronomy, and geology. Not only that, but also it will help the preservation and promotion of this heritage and it can as well attract organizations, institutions, and

individuals interested in collaborating on projects related to it.

The community needs to be educated more on Meteorites and their benefits so that they can appreciate it more as reported by 24.4% of respondents. Educating the community on the scientific importance helps promote interest in astronomy, geology and planetary science, fostering a greater understanding of our universe. Educating the community about its history and cultural significance will also help to preserve, celebrate, and share with future generations.

To create a big impact on the communities, while rendering the benefits on the ground, there should be approaches that are relevant and adherent to the people's way of living (Bukari & Mwalyosi, 2020; Andrade and Rhodes, 2012; Galvin, et al., 2020; Kaaya & Chapman, 2017; Molina-Murillo, 2016). Some authors have argued that local communities are unlikely to support protected areas if they have negative perceptions and attitudes toward them (Kideghesho et al., 2007). On the contrary, where local communities perceive protected areas positively, they are likely to be more supportive of protected areas (Mkonyi et al., 2021).

Conclusions and Recommendations

Conclusions

Almost all of the surveyed population are aware of the Mbozi meteorite. Most of the respondents became aware of it between 2000 and 2010 with a significant proportion learning about it in school. Nearly all respondents were of the opinion that there is a need to advertise the Mbozi meteorite more, in order to attract more tourists, for community economic growth, and to improve the relationship with people from other areas. A significant portion of the local community perceived a positive economic impact resulting from the presence of Mbozi Meteorite. Most of them recognized its contribution to the Songwe Revenue. Socially, the Mbozi meteorite had led to improvement of infrastructure, social cohesion and community integration. Culturally, the presence of the meteorite had brought attention to the local cultural heritage.

Recommendation

There is a need to introduce education Initiatives or education outreach programs which can play a crucial role in raising awareness about the significance of the Mbozi Meteorite. This can be

done by incorporating meteorite-related topics into school curricula and organizing workshops and education tours. There is a need to collaborate with local tourism and cultural organizations to increase awareness and attract visitors by promoting the Mbozi meteorite as a unique tourist attraction by highlighting its historical and scientific significance. There is a need for diversifying advertising channels by utilizing traditional media platforms like Television, radio, social media, online forums and websites as well as print media to reach a wider audience nationally and internationally. Finally, there is a need to encourage active community participation by involving local residents in the planning and decision-making process related to the meteorite to ensure that their voices are heard and their social, economic and cultural benefits are tailored to the community-specific needs.

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