

Identification and mapping of adventure tourism resources in Sohra Civil Sub-Division areas, Meghalaya

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Abstract

The main objective of this paper is to identify and map the adventure tourism resources having the potential to be developed in the Sohra civil sub-division areas of Meghalaya. The study firstly identified the adventure tourism resources and then mapped them accordingly. Interview and open discussions were held with various tourism stakeholders comprising adventure operators, state government officials, tour guides and local headmen to familiarise with the presence of adventure tourism resources in the area after which field visits were undertaken for verification. A matrix was used for the presentation and a better understanding of the identified adventure tourism resources. In total, nine adventure tourism resources falling under Sohra civil sub-division were identified as having the potential to be developed for adventure tourism. Each adventure resource was mapped against those sites/villages where adventure tourism could be carried out. The findings indicated that areas falling under Sohra civil sub-division have immense potential for adventure tourism due to varied adventure tourism resources. However, there is much more to explore new adventure resources in the area through a planned and systematic approach for the development of adventure tourism.

Keywords:

Adventure tourism, Adventure resources, Identification, Mapping, Adventure activities, Potential

1 Introduction

Adventure tourism is an alternative form of tourism (Leksakundilok, 2004; Triarchi & Karamanis, 2017) and an activity-oriented type of tourism (Hall & Weiler, 1992; Buckley, 2006; Dumitras, Mihai, Jitea, Donici & Muresan, 2021) which normally takes place in the natural setting and requires the participant to actively participate in the activities. As

adventure tourism is primarily undertaken in a natural environment, this form of tourism mainly makes use of natural resources. This is evident from the report of George Washington University, ATTA & Xola Consulting (2010), which stated that places having well managed natural resources are more likely to attract adventure tourists and sustained well in the adventure tourism market. Furthermore, resources for adventure tourism include landscape and biodiversity (Swarbrooke, Beard, Leckie & Pomfret, 2003; George Washington University & ATTA, 2020). Adventure activities offered through natural resources include kayaking, trekking, rock climbing, zip-lining, scuba diving, and others (Pomfret, 2006; Buckley, 2010; Khan, 2015; Lotter & Welthagen, 2020). The main objective of people undertaking adventure activities is for relaxation (Crompton, 1979; Dumitrais et al., 2021), escape from daily work (Pomfret, 2006), thrill and excitement (Beckman, Whaley & Kim, 2017), feeling of accomplishment (Usamah & Anuar, 2017), the attractiveness of the destination (Wang, 2016; Nepal, 2020) and self-esteem (Crompton, 1979). This niche form of tourism is experiencing a tremendous growth rate and currently valued at \$490 billion (Zutshi, 2018). It is also believed that adventure tourism is among the fastest budding tourism forms that attract high-end tourists and injects enormous economic benefits for the host region (UNWTO, 2014; Yetim, 2017).

The concept of adventure tourism has attracted a good number of tourists in recent years, and currently this form of tourism is gaining rapid popularity amongst all forms of tourists (Pomfret, 2006; Padmanabhan, 2018). The popularity of adventure is recognised globally, but even in Meghalaya, a state in the North-Eastern corner of India. The reason for this could be credited to the efforts put forward by various stakeholders concerning adventure tourism which in recent years have taken numerous initiatives for the development and upliftment of adventure tourism in the state. In addition, the attractiveness of the state which is blessed with a plethora of untapped natural resources is also a reason for the popularity amongst the adventure tourists. However, it could be seen that regardless of the global popularity of adventure tourism, very few academic literatures pertaining to this form of tourism exists (Ewert & Jamieson, 2003; Sung, 2004; Buckley, 2010; Giddy, 2018). In addition, it could also be observed that in Meghalaya. However, adventure tourism stakeholders laid efforts for the development of adventure tourism in the state, limited studies exist that can act as helping tool for adventure tourism developers. Also, no studies exist pertaining to identification of adventure tourism resources in the state which is the foremost step before developing any forms of tourism (Gautam, 2007). Therefore, the above reasoning provides enough purpose to conduct a study relating to identifying and mapping adventure tourism resources. This will guide the adventure tourism practitioners to tap the new adventure resources to be used to develop adventure tourism in the state. Therefore, the study aims to identify and map the adventure tourism resources in Sohra civil sub-division areas as plenty of untapped adventure resources sit here.

2 Adventure Tourism Resources

Adventure tourism known mainly as an activity oriented type of tourism (Hall & Weiler, 1992; Buckley, 2006; Dumitrais et al., 2021) that takes place in the natural setting (Ramos et al., 2021) mostly make used of the natural resources for its development and this is evident from the report of George Washington University, ATTA & Xola Consulting (2010) which highlighted any place that contains well maintained natural resources has higher possibility of attracting adventure tourists and performed well in the adventure tourism market.

Buckley (2010) observed that since adventure tourism is mostly undertaken in an outdoor environment, the geographical features like the natural resources and topography of a place are very vital for the development of adventure activities. Adventure tourism mainly used landscape and biodiversity to develop (Swarbrooke et al., 2003; George Washington University & ATTA, 2020). It can be understood that natural resources which comprises of rivers, mountains, valleys, lakes, etc. are to be considered as one of the important ingredients for adventure tourism.

Furthermore, a number of studies recognises the importance of various natural resources like mountains, caves, canyons and valleys for developing different adventure activities (Spalevic & Igracev, 2011; Zakaria, Harun & Salamuddin, 2015; Mckay, 2016; Okonkwo, Afoma & Martha, 2017; Wang & Yang, 2021). This points out that a country, region or place with attractive natural resources can develop a handy number of adventure activities. Tshipala & Coetzee (2012) and Wang & Yang (2021) also mentioned that adventure tourism could be carried out on the basis of the natural resources available, which can contribute towards introduction of various activities such as rivers for kayaking, cliffs for rappelling and rock climbing, waterfall for white-water tubing, mountain ranges for trekking and hiking, forested areas for quad biking and mountain biking. In addition, the importance of natural resources for adventure tourism development is even recognized by the adventure operators who feel that the natural environment should be taken care of through various initiatives. This initiatives would avoid any interventions that could harm the environment and eventually affect the adventure tourism experience (Giddy, 2016; Ramos et al., 2021).

As expressed by Mckay (2016), the demand for adventure tourism will depend heavily on the geographical or physical richness of the area and the ability in lending a hand towards development of various adventure activities. This clearly shows that adventure tourism can be developed only when suitable adventure resources like rivers, mountains, lakes, valleys, cliffs, etc., are available in the area proposed for adventure tourism development. Table 1 highlights some of the adventure resources required for different adventure tourism activities.

Table 1: Adventure activities and resources used

Adventure Activities	Adventure Resources Used
Mountain biking	Forest areas, mountains
Trekking	Mountain ranges, forest areas
Camping	Forest areas, rivers, grasslands, farmlands
Caving	Caves
Rappelling	Rocks, cliffs
Bird-watching	Forest areas, rare bird species
Rock climbing	Boulder rocks, cliffs
White-water rafting	Rivers, Rocks
Scuba diving	Oceans, Seas, coral reefs
Snorkelling	Lakes, oceans
Surfing	Oceans, Seas, Lakes
Zip-lining	Gorges, mountains, forest areas
Paragliding	High peaks, cliffs, mountain ranges
Cliff diving	Cliffs, lakes, seas, oceans

Source: (Swarbrooke et al., 2003; Oh, Ditton & Stoll, 2008; Tshipala & Coetzee, 2012; Zakaria, Harun & Salamuddin, 2015; Wang & Yang, 2021)

3 Study Area

Sohra civil sub-division covers popular tourist destinations and those areas with immense potential for tourism. Sohra civil sub-division jurisdiction extends to Umtyngar in the North, Shella-Majai to the South, Nongjri Umniuh to the East and Laitkynsew-Nongwar to the West (Sohra Civil Sub-Division, 2020). The headquarter of the sub-division is located in Sohra, a popular tourist destination and famously known for once holding the record of being the wettest place on earth. The sub-division is generally located in the Southern part of Shillong at a distance of 52km from the state's capital. The geographical location of the sub-division is between 25'30'N and 91'70'E with an elevation of 1484 m above sea level measured at the sub-division headquarter (Sohra Civil Sub-Division, 2020).

The study area can be divided into two community and rural development blocks. The first is the Shella-Bholaganj Community & Rural Development Block. The second one is the Khatarshnong-Laitkroh Community and Rural Development Block. In relation to adventure tourism resources, the study area holds plenty of them that can offer a good adventure experience for adventure tourists. Adventure tourism resources are scattered at various places within the study area, with the most prominent being the Umiam river that traverses through Shella village. Interestingly, the area is home to many adventure resources that are yet to be tapped for touristic purpose.

4 Methodology

The present study focused on the identification and mapping of adventure tourism resources of Sohra civil sub-division areas. To fulfil the study's objectives, interview and discussions were held with various tourism stakeholders comprising adventure operators, state government officials, tour guides, and local headmen. After a detailed discussion with all the tourism stakeholders was held, a field visit was undertaken to each identified adventure resources site for verification. Pictures of all the identified adventure resources were taken. The secondary data was also collected from various sources such as articles, maps, e-news, Government of Meghalaya publications and internet. The results yielded from the interviews and discussions with all the tourism stakeholders and the information and evidence gathered during field visits have all been taken into account for identification and mapping of adventure tourism resources which were then presented in the form of an adventure tourism resource matrix for better understanding.

5 Results

The adventure tourism resources were identified and mapped keeping in mind the issue of sustainability. The concept of sustainability was considered part of the study wherein only those resources deemed fit for adventure tourism development were identified and mapped. In contrast, the other natural resources were left untouched to ensure preservation of such resources for future generation usage. Local communities who are the main custodian of the resources present in their areas and the major stakeholder in any sustainable tourism development were involved in the study. Their opinions and feelings were taken into account in the identification and mapping of adventure resources. The local

communities also believed that such initiatives will indeed lend a hand in the development of tourism in the region that eventually will bring viable economic and social benefits to the community in general. The matrix highlights the potential adventure tourism resources located at different sites/villages that could be used for adventure tourism purpose. The adventure tourism resource matrix of Sohra civil sub-division areas is presented in Table 2.

The different types of adventure tourism resources have been identified, listed and mapped against the sites/villages where adventure tourism could be carried out or developed with existing or new approach. Adventure activities suitable for each identified adventure resource sites have also been identified. In addition, issues related to adventure tourism are also highlighted in the matrix.

Table 2: Adventure Tourism Resource Matrix

Sl no	Adventure resources	Location	Main features or attractions	Adventure activities available	Opportunities for adventure tourism	Problems
1	Umiam river	Shella	The crystal-clear water that runs through the river with a scenic landscape	Boating, Beach football, Kayaking, Angling	Plenty of opportunities in developing other adventure activities in addition to the existing ones	Bad road condition leading to Shella. People not aware of tourism potentiality. Poor infrastructural facilities.
2	David-Scott trail	Sohbar	A trail with historical importance behind it	No activities	Possibilities for trekking through the trail coupled with information on its history	Not developed and less awareness about the place
3	Wahrew river	Sohbar	The crystal-clear water that runs through the river with a scenic landscape	Kayaking, Angling, Camping, Swimming	Water sports activities could further be developed.	Issue of accessibility due to bad road condition and not well promoted
4	Nohkalikai fall	Sohra	It has a legendary story behind it. It is the tallest plunge waterfall in India	Trekking	More activities could be introduced. Information on its legendary story	Poor management and not properly developed. Less conservation activities.
5	Mawkhyrdop cave	Sohra	It has great number of stalactites and stalagmites. Meghalayan age got its name after findings from this cave.	Caving	Cave expedition coupled with information on its impacts on the world geography	Limestone quarrying near the cave disturbing the cave ecosystem. Cave is not properly maintained
6	Wahniangleng	Laitkroh	The river running between the deep gorges. It also has a rock called 'maw pukir' standing in the middle of the river that never gets covered by water even during the season of high river discharge	No activities	Big open grassland near the river suitable for camping and other land-based activities. The stretch of the river makes it ideal for various water sports activities. Opportunity for the tourists to know the story behind maw pukir	Not yet developed. Locals are unaware of the tourism potentiality of the place.

7	Lyngksiar fall	Mawkma	It has a crystal-clear water and also derived its name after a rare orchid species called 'TiewLyngksiar' that blooms near the waterfall	Trekking to the waterfall	The scenic landscape surrounding the waterfall makes it an ideal place for camping. Activities like waterfall rappelling, zipling could be introduced to attract adventure tourists	The place is not well developed. The locals lack expertise in developing the place.
8	Janailar river	Mawkma	Crystal-clear water with a clear view of its deepest end	No activities	Opportunities for developing adventure activities like cliff jumping, snorkeling, camping, swimming, boating	Not yet developed. Potentiality of the resource is not realized.
9	David-Scott trail	Lad Mawphlang-Mawphlang	A trail having historical importance	Trekking along the trail	Trekking through the trail with interpretation on its history. Other adventure activities could be introduced along the trail.	Poor infrastructural facilities. Lack of proper maintenance. Not well promoted.

5.1 Umiam River

Umiam river in Shella is a little waterway that traverses through the town of Shella in the East Khasi Hills of Meghalaya. The waterway stretches all the way to the International border of India and Bangladesh. The intensity of the flow of Umiam River is very rough during the rainy season; however, it is sleek during the off rainy months. The waterway has caught the attention of many nature lovers due to its crystal-clear water and the scenic landscape that surrounds it. The river with its quiet and serene environment is the best getaway for many who wished to rejuvenate from the busy daily schedule. The dimension of the river is one attractive figure which makes it ideal for various water-based adventure sports. In addition, the surrounding of the river also offers plenty of opportunities for terrestrial-based adventure activities.

5.2 David Scott trail

The David Scott trail which is located in Sohbar Village is known to the tourists not so long ago. The trail is a continuation of the already well-known David Scott trail between Lad-Mawphlang and Mawphlang village and is located just few kms from Wahrew river. The trail derived its name from a British officer named David Scott, who was the Khasi Hills District of Assam administrator during the colonial period. The trail was of great significance for the British as it was used for horse-cart transportation to connect Sylhet and Guwahati in the 1800s. The trail has its starting point near Tharia village and stretches all the way to Sohbar village for a length of nearly 3kms. The trail generally takes one hour to trek and is suitable for all age groups. The trail is located in the midst of slim vegetation and is fairly hidden from the eyes of many. The trail was constructed using cobblestone and presently is being used by the inhabitants of the village. The history associated with the trail and its soothing environment and rich vegetation make this place an exciting destination for tourism activities.

5.3 Wahrew river

Wahrew River lying down the hills of village Sohbar is a newly discovered tourist destination located in Sohra Civil Sub-Division area. The river is located just at a distance of 18 kms from Sohra. The river Wahrew in Sohbar has its originating point in Wahkhen village and is characterized by a number of beautiful tributaries that coalesce into the main river that flows to the plains of Bangladesh. The river could be accessed either through Sohbar village via a rough terrain road of 8 kms or through a longer stretch of Majai border roads. The river is blessed with a picturesque timbered landscape; and its crystal-clear water has the ability to enthrall many nature enthusiasts. The warm weather prevailing in the village and the dimension of the river are two combining strengths that makes the river an ideal resource for various adventure activities.

5.4 Nohkalikai Fall

It is the tallest plunge waterfall in India with a height of 1115 feet. The waterfall, which has a legend connected to it, is located near Sohra town, one of the wettest places on earth. The crest of the Nohkalikai waterfall covers a distance of nearly 1km, and it generally takes one and half hour to complete the entire walk. The trek starts with walking through open grassland then descending down a steep slope covered with dense vegetation and crossing the river bed of crystal-clear water. Towards the mouth of the fall, rocks formations that seem to dress a primitive look and the river ravine bear a resemblance of fine arts collection with wonderful carvings that will leave people fascinated. The crest of the waterfall is accessible only during the winter months when the rush and intensity of the water is low and calm. The trek towards the mouth of Nohkalikai fall is quite strenuous and offers real adventure as it requires the trekker to crawl down the narrow path and climb the steep slope.

5.5 Mawkhyrdop cave

Krem Mawkhyrdop or Mawkhyrdop cave locally known as Krem Mawmluh having a length of 7194m (Brooks & Brown, 2008) is believed to be one of the longest caves in the Indian sub-continent (Biswas, 2009). The cave is located towards the western part of Sohra town. The cave is blessed with attractive features such as wonderful calcite formations, narrow openings, glittering rocks and the river bed that runs inside the cave. These fascinating features are intriguing in the eyes of many and even catch the attention of hardcore adventurers. The main entrance into the cave is via the river, which lies to the south east of the now abandoned MCCL cement factory. The entrance is about 10 ft. above water level. A single entrance leads to a double passageway, where the upper portion in certain areas has caved in due to the intensive quarrying of limestone above the cave. Expedition inside Mawkhyrdop cave is suitable only for the physically fit individuals due to its accessibility barriers. The cave is opened for visitors through the assistance of an approved guide.

5.6 Wahniangleng

Wahniangleng is a river flowing down the valley of Laitkroh and Mawphlang village. The river is an untouched natural attraction falling under Sohra Civil Sub-Division jurisdiction and situated at a distance of 30 kms from Shillong city. Wahniangleng runs through the valley in the midst of forest covers and open grassland. The river traverses through a winding and long stretched passage till it reaches Mawphlang dam. In the middle of the river, a stone

called 'Maw Pukir' has a folktale associated with it. As per the tale narrated by the locals of the area, Maw Pukir impacts the economy of the people of the area. The impact is such that whichever direction the stone faces, those areas will prosper and do well economically. Furthermore, the unique feature of the stone was such that in the earlier days, the stone will never be fully covered by water even during the season of high river discharge. The entire river is blessed with a picturesque landscape surrounded by grasslands, forest areas and hilly slopes. The river could be accessed through Laitkroh village and one needs to trek down from the village for about half an hour to reach the ultimate point. The river has not yet been tapped for the development of tourism in the area, but definitely has the charm and personality to be exploited for tourism advancement.

5.7 Lyngksiar Fall

Lyngksiar fall is a hidden waterfall located in Mawkma village located at a distance of 45 kms from the capital of the state, Shillong. The fall bears extreme natural beauty which is so fascinating in the eyes of many. The name 'Lyngksiar Fall' was adopted from the unusual orchid called 'Tiew Lyngksiar' that blooms once a year in places around the village. The fall is located in the midst of rich vegetation surrounded by small forest areas and grasslands. It attracts good number of visitors due to the attractiveness it possesses and the crystal-clear water that plunges of the fall intrigues many visitors. Lyngksiar fall was used initially by the locals as fishing ground, but recently the fall was open to the public for tourism activities. The fall has not yet been fully tapped for tourism growth in the area but possesses extreme potential for the development of various tourism activities. The waterfall could be accessed via Mawkma village after which the visitors need to walk down from the village through open grasslands and small slopes to finally reach the fall.

5.8 Janailar river

Janailar river is a river located just few meters down of Lyngksiar falls under Sohra civil subdivision jurisdiction. It possesses crystal-clear water that enables any person to see the deepest end of the river with a naked eye. Many visitors frequently visit the river due to the attractiveness it owns. This watercourse was open to the visitors not so long ago and people usually visited this natural attraction for trekking and picnicking. Janailar river has not yet been exploited for tourism development but the charm and personality it owns make this watercourse to be an ideal place for introducing various adventure tourism activities.

5.9 David Scott trail

The David Scott trail between Lad-Mawphlang and Mawphlang is one of the oldest and most popular trekking routes in Meghalaya. The trail derived its name from a British officer named David Scott, who was the Khasi Hills District of Assam administrator during the colonial period. The trail was of great significance for the British as it was used for horse-cart transportation to connect Sylhet and Guwahati in the 1800s. The David Scott trail between Mawphlang and Lad-Mawphlang covers a distance of 16kms and generally takes around four hours to complete the trek. While ascending and descending the slope of the trail, the magnificent valley could be seen which is pleasing to the eyes. The entire 16 kms trek is surrounded with wonderful natural wonders such as crystal clear flowing river, waterfalls, lush green forest covers, boulder rocks and charming valleys. The trail's attraction consists of Simpanghang Falls, the Suspension Bridge, Wahtham valley, Stone Bridge, and Mawnguid-Briew. The Uiam River with its rush flowing rapids adjacent to the trail is another eye-catching attraction of the area. A plethora of natural resources available all

throughout the trail provides immense opportunity for the development of many adventure activities.

6 Discussion

The results of this study indicated that there are plenty number of adventure resources in the study area of which some are being used for adventure tourism purpose and others are yet to be tapped giving immense scope for adventure tourism operators and adventure tourism developers to explore these new resources feasible for adventure tourism. Adventure operators can unearth the potentiality of these adventure resources and bring about new adventure activities that could bring satisfaction and positive experiences for the adventure tourists. The findings also showed that the identified adventure resources have unique characteristics and features that could intrigue any adventure tourists visiting the area.

However, despite the unique adventure resources the place owns, a concerning issue is that only a few adventure activities are offered at some sites to the tourists and in some places not at all giving the tourists limited options on the choice of activities. The adventure tourism operators or developers should look into this issue and come up with more and new adventure activities. Furthermore, the state government, tourism planners and promoters should also look into the issue of infrastructure, management and promotion cautiously. This is because the results drawn from field visits and interviews showed that certain sites having attractive and unique adventure resources lack good road leading to the sites and basic accommodation facilities, which in turn affects the tourist flow to those areas. The issue of management is also a concerning one as most of the adventure operators still lack well trained manpower and sophisticated equipment required for adventure tourism. Taking care of the environment and its surrounding is also very important as the natural environment is the primary attraction of any adventure tourists and this could be achieved thorough collaborative efforts of the tourists, operators and also the local communities. The issue of development and promotion is also a concerning one that requires immediate attention. Adventure tourism stakeholders should come forward to tap the unexplored adventure resources and bring about new changes in the adventure tourism scenario in the state that could attract plenty more adventure tourists in the future.

Also, routes or directions must be developed and maps prepared for adventure tourist visiting the adventure sites especially those opting for trekking, hiking, mountain biking and others. This could help the tourists visiting the adventure sites to easily locate the area and the tracks. Lastly, the most important thing that needs to be considered under the ambit of adventure tourism development is the concept of sustainability. The identification and mapping of adventure tourism resources which is the first stage of adventure tourism development needs to be carried out in such a way that it takes due consideration and involvement of the local communities and adventure operators who are the main stakeholders in any sustainable adventure tourism development. The collaborative efforts of the government, local community members and adventure tourism developers will therefore ensure symmetry between sustainability, environmental cautiousness and good yield in the course of development.

2 Conclusion

There is immense potential for areas falling under Sohra civil sub-division to become an adventure tourism site. The reason for this is because of the presence of plenty number of resources suitable for adventure tourism. Most of the resources that reside under Sohra civil sub-division areas comprises rivers, waterfalls, ancient trails, living root bridges, boulders, valleys, and caves; most of which are untapped, giving scope for exploration and development. It is understood that adventure tourism development is highly dependent on the natural environment, infrastructure available and local support. However, local community participation is also very important. Adventure tourism development initiatives through well-trained local people can ensure more sustainability and bring more economic benefits to the place. This being said, local community collaboration with other agencies such as adventure tourism developers or operators, government authorities and other adventure tourism stakeholders will further improve the development and sustainability of adventure tourism in the area. Furthermore, most of the resources identified requires human intervention through proper planning to improve the infrastructure and tourism facilities of the area so that the true potentiality of adventure tourism could be realised.

3 About the author

The author is currently an Assistant Professor in Tourism discipline at Lady Keane College, Shillong. He is also pursuing his Ph.D. program from North-Eastern Hill University, Shillong under UGC NET-JRF scholarship. The author has a deep interest on adventure tourism and is well contacted by adventure tourism stakeholders in the state for advice and suggestions. A number of research papers were presented in recent past pertaining to cave tourism, adventure tourism and is accepted by the organizers. The author works in tandem with the adventure tourism planners and developers in the state for developing a sustainable adventure tourism offering a quality experience for the adventure tourists.

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