

BUDDHIST MONASTIC TREK CIRCUIT AMIDST OF A GEOTOURISM LANDSCAPE: A STUDY IN THE VICINITY OF KHANGCHENDZONGA NATIONAL PARK IN INDIA

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Citation: Chakrabarty, P., & Sadhukhan, S.K. (2020). BUDDHIST MONASTIC TREK CIRCUIT AMIDST OF A GEOTOURISM LANDSCAPE: A STUDY IN THE VICINITY OF KHANGCHENDZONGA NATIONAL PARK IN INDIA. *GeoJournal of Tourism and Geosites*, 31(3), 1135–1145. <https://doi.org/10.30892/gtg.31327-550>

Abstract: Tourism has been introduced in Khangchendzonga National Park and its surroundings based on its outstanding natural and cultural resources. It is a sacred Buddhist landscape endowed with geotourism potentials. This paper aims to evaluate the scope of symbiosis between Buddhist tourism and geotourism applying GIS and SWOT with emphasis on evaluation of the values of existing tangible and intangible heritages. Results address the research gap on sustainable utilization of a geotourism landscape which is more familiar as a landscape of Buddhist heritage in tourism industry for incredible metaphors that glorified it as sacred.

Key words: Buddhist heritage, tangible, intangible, sacred, sustainable

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INTRODUCTION

Tourism is considered as a weapon for backward area development particularly for the hilly areas which are not very much conducive for agriculture or any other industry. The concept of inclusive tourism advocates for involvement of disadvantaged communities of such areas in tourism industry while ensuring the preservation and protection of the environment for future generation (Giampiccoli et al., 2020). For rural and remote backward areas, sustainable tourism could be used as an approach with its concepts and practices in the context of participation, empowerment, transparency and justice (Arintoko et al., 2020). Empowerment of the local people is one of the important community based tourism principles (Atanga, 2019). As a geotourism landscape yields such empowerment not only by providing economic opportunities but also imparting the education and awareness on geoconservation, it is praised for attaining the goals of sustainability (Chakrabarty and Mandal, 2019). Sikkim in north-eastern part of India is a tiny state which is appraised for promoting tourism for its backward area development. The success of Sikkim in extending capabilities in this sphere by incorporating new products like monastic trek through protection, development and utilization of cultural heritage attracts the scholarly attention. Sikkimese Buddhism is over 1200 years old and attracts touristic attention as it has features of both Indian and Tibetan culture (Agrawal et al., 2010). The positive attitude of Buddhist monks in receiving visitors is vital on promotion of any tourism project centering religious sites since tourism is usually perceived by the spiritual stakeholders of the shrines as an activity against which the sacred space needs to be protected (Wong et al., 2013). The conjoint notions of secular pilgrimage and sacred tourism have been found advocated recently in the glorious mountainscape of the Indian Himalaya (Singh, 2006). A group of tourists may desire to experiences something unique that they have not experienced before (Jimenez-Beltran et al., 2019). This is why festival tourism around sacred objects/faith is so popular now a-days (Acha-Anyi and Alami, 2019). A study on monastic trek on sacred landscape with special emphasis on the changing spatial and environmental dimensions of pilgrimage is one of the examples for why pilgrimage could not be separated from religious tourism, at least in case of India (Singh, 2013). Further, there exists a research gap on the impact of symbiosis between religious tourism and geotourism, which is little addressed yet.

Sikkim is a Buddhist state which owes its origin in the myths relating to 8th century legendary Buddhist monk Padmasambhava, a 135 feet high statue of whom constructed and consecrated in the year 2005 is a tourist attraction (Arora, 2006). He was a master of magic cult, who is believed to create a *Shangri-La* (mystical harmonious valley) taming the demoniacal forces. Sikkim is a combination of two Limbu words: 'Su' meaning new and 'Khyim' meaning house, *Shangri-La* is spiritually considered as the heaven for habitation gifted by Guru Padmesambhava to the followers of Buddhism. It was so fertile that the migrated Bhatia's referred the landscape as *Beyul Demazong* (the hidden valley of rice) while the Lepchas who are original inhabitants named it Nye-mae-el (meaning paradise). The Khangchendzonga National Park area of Sikkim is virtually a paradise for which it has been recognized as India's first Mixed Site on World Heritage List of UNESCO, 2016 (Kumar and Singh, 2017). Not only for the natural heritages but also its Buddhists cultural heritages, such recognition as world heritage site was obtained in the year 2015, which made a boost in international tourist arrival of the region. The National Park draws ecotourists in increasing number since it was designated as biodiversity hotspot by World Wildlife Fund (WWF) in 1992-1993. Further the picturesque hill settlement Yuksom in West Sikkim District is the gateway for Goeche La (Chakrabarty and Sadhukhan, 2018) trek and thereby enjoying the status of a well-known international tourism hub during the last two decades. For monastic trek (Table 1), the importance of this settlement is further increased.

The Study Area and Objective of the Study

Geologically Sikkim is the part of both Lesser Himalayan and Great Himalayan Mountain. Rangit and Tista catchment hosts the main transverse river system of Sikkim. The complexity of geomorphic evolution has played an important role in development of existing topography. Singalila Range is the principal mountain range of the study area of West Sikkim. The elevation increases north to northeastward of the West Sikkim District. The South Tibet Detachment (STD) is the northern boundary of Sikkim and The Main Frontal Thrust (MFT) defines the southern boundary of Darjeeling-Sikkim Himalaya (Kellett et al., 2014). The Main Central Thrust (MCT) and

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Ramgarh Thrust (RT) are well exposed in that area exhibiting south to north alignment. The Main Central Thrust (MCT) separates the Lesser Himalayan formations and the Higher Himalayan Crystalline (HHC) along a prominent break of slope (Weidinger and Korup, 2009). Some portion of the Demazong is situated on the Lesser Himalayan zone (the south of MCT) whereas maximum portion of the study area is significantly on the transition zone along the Main Central thrust. The greater Himalayan sequence is prominent on the hanging wall of the MCT and Lesser Himalayan sequence could be traced at the footwall of the thrust (Singh et al., 2017). The Greater Himalayan sequence of that area consists of high grade gneisses, migmatites, calc-silicates and leuco-granites, while the Lesser Himalayan sequence consists of low grade metasedimentary rocks being a part of Daling group rock structure (Catlos et al., 2004).

Table 1. Segmentation of monastic trek route (Source: Field Work, 2019)

Day	Segment	Distance in Km.	Maximum elevation (metres)	Minimum elevation (metres)
1	Yuksam to Khecheopalri	10	1955	1204
2	Khecheopalri to Pemayangtse	15	2027	1799
3	Pemayangtse to Tashiding	19	1962	700
4	Tashiding to Yuksam	29	1955	768

The transition zone between these two lehotectonic units is of several kilometres in width where inverted Barrovian metamorphism is found. This inverted Barrovian type metamorphism developed during the tertiary period in connection with thrusting and folding of the rock. This zone consists of schist, psammite, quartzite, calc-silicate and Lingtse gneiss (Basu, 2013). Sikkim-Darjeeling Himalaya is considered a paradise for geomorphosite lovers because of the presence of following groups of rocks formulations (Sarkar et al., 2012):

(a) Darjeeling group of rocks is the oldest rock formation of the area is consisting of high grade gneisses known as Darjeeling Gneiss containing quartz and feldspar.

(b) Daling group of rocks which are mostly metamorphosed; composed of schists, quartzites, phyllites and slates.

(c) Gondwana rocks; is consists of sandstone and carbonaceous shales.

The unequal uplift or tilts occur in this tectonically unstable part of Eastern Himalayan to a great extend have contributed the development of variegated topographic forms including valley slide slope, gorge, ridge and lake through the glacial, periglacial and fluvial processes in addition to regular landslides and mass wasting operations. The morphology thus developed on lithological formation has immense geotourism potentials. The present study has been undertaken with the following objectives:

1. To study the geotourism of monastic trek, a Buddhist quadrilateral, the four corners of which are constituted by Tashiding, Dubdi, Khecheopalri and Pemayangtse.

2. To evaluate strength, weakness, opportunity and threats of tourism promotion centering a glacial lake named Khecheopalri from sustainability concern.

The study area Demazong, known to be the abode of Sikkim's protective deities (Balicki-Denjongpa, 2003) is conceived as sacred in terms of its history and geography and thus considered to be an ideal place for experimenting on implementation of monastic trek with a geotourism perspective. Four trekking trails have been identified for this purpose by Sikkim Government in this context, the cardinal points (Figure 1) of which are further evaluated to understand their viabilities from the standpoint of both nature and culture tourism hubs. The elevation profile of the trekking trail further reveals that the trek route is relatively comfortable and easy than other treks initiated from Yuksam but body fitness is pre-requisite for this 4 days trekking schedule covering a length of near about 73 kilometres. The entire trek route is situated between 700 metres to 2100 metres. Trekking schedule also differs along this trek corridor from segment to segment day wise (Figure 1) for the convenience of the trekkers due to variation of slope and relative relief. The trekking segment of day-1 from Yuksam to Khecheopalri Lake via Dubdi Monastery and day-2 from Khecheopalri to Pemayangtse via Darap village are more difficult segments of entire trekking schedule.

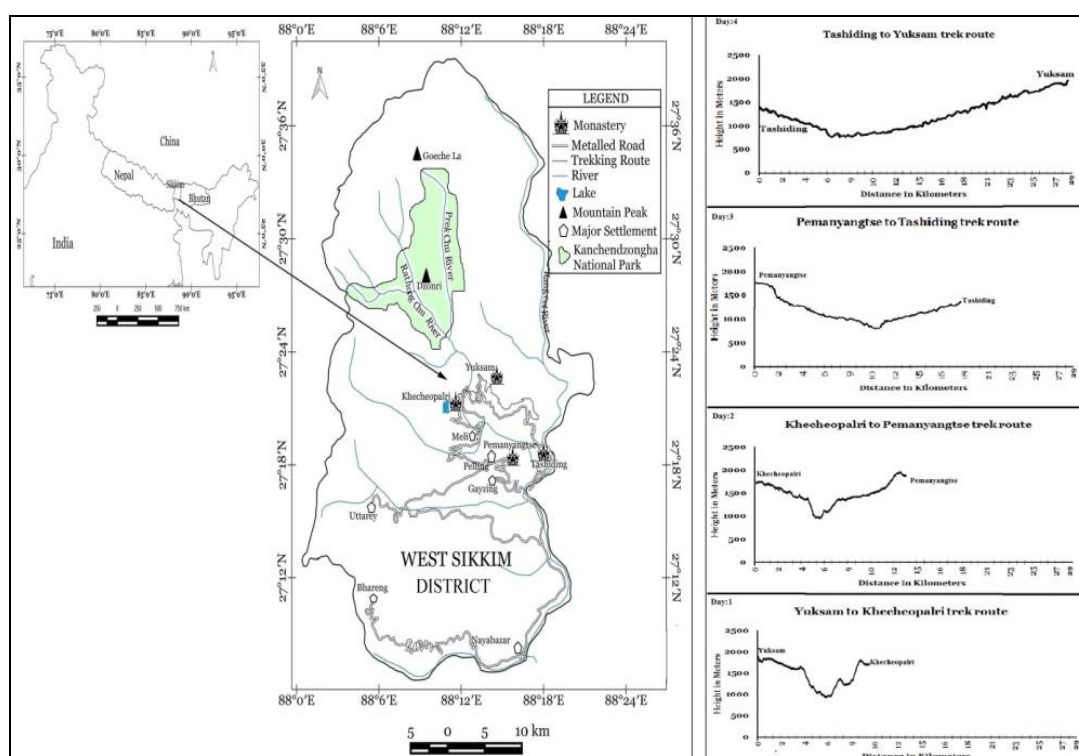


Figure 1. Terrain evaluation for Monastic trek in Sacred Quadrilateral of Demazong (Source: Prepared by the authors, 2020)

MATERIAL AND METHODS

Conserving and preserving of cultural heritage is an interdisciplinary field (Indrie et al., 2014). Detail literature survey was initiated to understand the cultural heritage of Demazong with special reference to the local folklores to fulfill the requirement of adding additional attraction to the sacredscape for the satisfaction of cultural tourists. A hotspot analysis has been undertaken in software environment on the four heritage settlements namely Pelling (Pemanyangtse), Yuksam, Khecheopalri and Tashiding which produce a heat map for the sacred quadrilateral. For each and every site common factors have been weighted based on visitor response survey (High-0.15, Moderate-0.10 and Low-0.05 as level of influence exerted on the respondents). In contrast to the weightages ratings have been made (David et al., 2009) depending on attraction status ranked accordingly from dominant to below averages. For the dominant attraction factors, the rating value is 4 while for above average, the rating value is 3, for average status it is given 2 and for below average the rating value considered is 1. The W-Score is derived by multiplying the weight and rating for respective attraction factors. Based on summation value of W-Scores for respective sites, respective hotspots have been evaluated and a heat map is generated to explain the status of the the monastic trek route by QGIS 3.10 software. Google earth satellite images have been used for preparing DEM for the circuit to evaluate the terrain condition with reference to the locations of the sacred sites of Demazong, the sacred landscape for the community.

Among the popular tourist hubs in the region, maximum dispute is noticed on Khecheopalri, the environmental degradation of which is even reached to the apex court of judiciary seeking justice for the devotees who are concerned on its cleanliness. The agitation against tourism in Khecheopalri Lake has its origin in a folk belief that if the lake is polluted by the outsiders, the sacredness will be lost and as the consequence the sacred lake may change its location as happened before. The reason of such shift might be tectonic but exerts immense impacts on the beliefscape. The authors interviewed the pilgrims and more than 90% of them are aware on such threat and in favour of conservation of the lake by restricting tourist activities. Concern on sustainability issues of the landscape has been addressed through a SWOT AHP analysis evaluating the status of Khecheopalri and its surroundings in order to introduce Monastic trek as sustainable alternative of mass tourism.

RESULTS AND DISCUSSION

Lepchas are considered as the earliest settlers in the land of Sikkim while Bhutias migrated from their original habitat of 'Bhot' (Tibet) and settled down on or before the 13th century (Rai and Bhutia, 2015). The name 'Bhutia' originates from 'Bhot', who are distinguished for their Tibeto-Burman dialect and legacy of Namghyal dynasty. They ruled Sikkim from 1642 to its merge with India on 16th May, 1975. Sacred geography of Sikkim is manifested through a term 'Beyul Demazong' deep rooted in the Tibetan cultural tradition, Beyul refers to places where physical and spiritual world overlaps as defined in the text of the Nyingma school of Tibetan Buddhism. The word Nyingma itself means ancient and Nyingma School is one of the oldest schools in Buddhist traditions. According to mythology, Guru Rimpoche (also called Padmasambhava, who came from India being invited by Tibetan King Trisong Duetsen) roamed the country of Sikkim riding a blue horse to create the Buddhist sacredscape by taming the prevailing evil forces. With the pilgrimage tourism development by governmental efforts using such religious metaphors, there is increasing awareness on sacred geography of the country relating to Lepcha-Bhutia cosmologies around various geomorphosites. These two ethnic groups of Sikkim are devout Buddhists while the Gorkhas migrated from Nepal are followers of Hinduism. Presently with other Nepali group of migrants, they form the majority of Sikkimese population. Though the Buddhists are minority in respect of numbers, the scope of pilgrimage and tourism around their culture provided them strength to compel the government to scrap the Ranthong Chu hydroelectric project (Gurung, 2012) located at Yuksam, which was affecting their sacred geomorphic entities of the landscape.

Preserving Yuksam as a sacred landscape and respecting the religious sentiments of the Buddhists have been cited as the driving forces for the closure of the project in the year 2002. Significantly this is the time when Sikkim realized the potentials of pilgrimage tourism, which was not understood in the beginning of the 1990s, when the project was initiated. Instead of earning revenue from hydel power project, a wise decision is taken on promoting the pilgrimage tourism. The introduction of monastic trek is the extension of such plan. Arrival of Padmasambhava in Sikkim during the 8th century might be a mythical event but the coronation of Chogyal Phutsog Namghyal, the first king of Sikkim by three representative of Nyingma school of Tibetan Buddhism, namely Lhatsun Chenpo, Ndaga Senpo Chenpo and Kartok Khuntu Zangpo was the landmark event in the Buddhist history of Sikkim. All the historical monasteries of the study area (Figure 2) that attract pilgrims and tourists are manifestations of the institution of the Chogyals (Table 2).

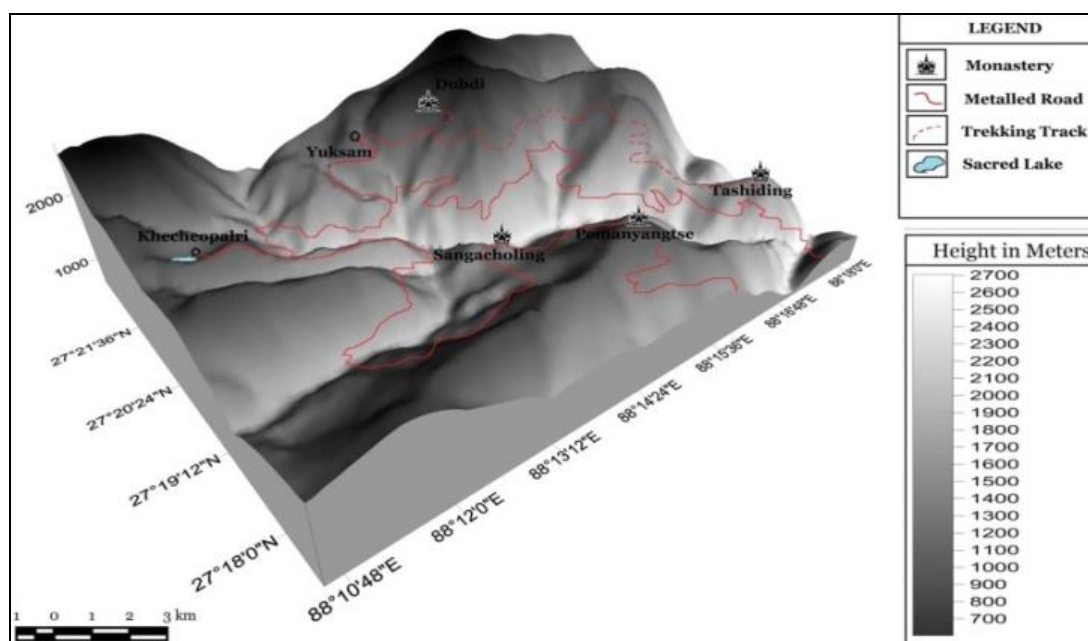


Figure 2. Buddhist Monasteries of Demazong (Data source: Google Earth Pro, 2020)

The sacred Buddhist landscape called Demazong is conceived as an anthropomorphic entity consisting of four plexuses of the human body. Tashiding by virtue of its spiritual merit is conceived as the head portion while Yuksam (at a distance of 16 km) symbolizes the third eye because it was the meeting place of three *Lamas* (preceptors in Tibetan Buddhism) in coronation ceremony of first Chogyal. The stone throne where first Chogyul was coronated at Norbugang in Yuksam village of West Sikkim is an attraction for Buddhists as well as secular tourists as a historic cultural site (Figure 3). A 300 year old Fir tree is shading the throne just as the Bodhi tree is shading the throne of Lord Buddha at Bodhgaya, the most revered place for the Buddhists all over the world. The name Yuksam itself is derived from the historical event of the establishment of Buddhist Kingdom. Yuksam means “Meeting Place of the Three Learned One” which became the first capital of Sikkim (Rubita, 2012). The footprints of *Lamas* at Norbugung declare the sacredness of Dubdi Monastery (Figure 4), which is just an hour trek situated at the top of a hill in the vicinity.

Table 2. Monasteries of West Sikkim drawing pilgrims and tourists (Source: Literature Survey and interview with Buddhist monks in field, 2019)

Sl. No.	Name of the Monastery (with spiritual connotation)	Year of establishment
1	Sangacholing (the island of esoteric teaching)	1697
2	Dubdi the retreat for meditating Lamas	1701
3	Pemanyangtse (the sublime perfect lotus)	1704
4	Tashiding (the devoted central glory of holy sky conceived as island)	1741



Figure 3. Coronation Site of the Royal Dynasty of Sikkim



Figure 4. Dubdi Monastery on a hill adjacent to Coronation Site at Norbugang

In the establishment of late 17th and early 18th century monasteries in West Sikkim, the involvements of the three *Lamas* (literally means “high priest”) are noteworthy. Tashiding monastery (Figure 5) was founded by Ndagag Senpo Chenpo depending on a legend associated with the great Guru Padmasambhava of 8th century. According to the legend, it was place of meditation selected by Guru Padmasambhava himself, who shot an arrow into the air and declared that he would meditate at the place where the arrow landed (Jacob, 2013). The monastery is housing the sanctified holy vase of the Master in a sacred chamber, which is the prime of attraction of the Bhumchu, the annual festival of the monastery held in between February and March every year. For the Sikkimese pilgrims, the divinity of Tashiding is most revered among their monasteries.

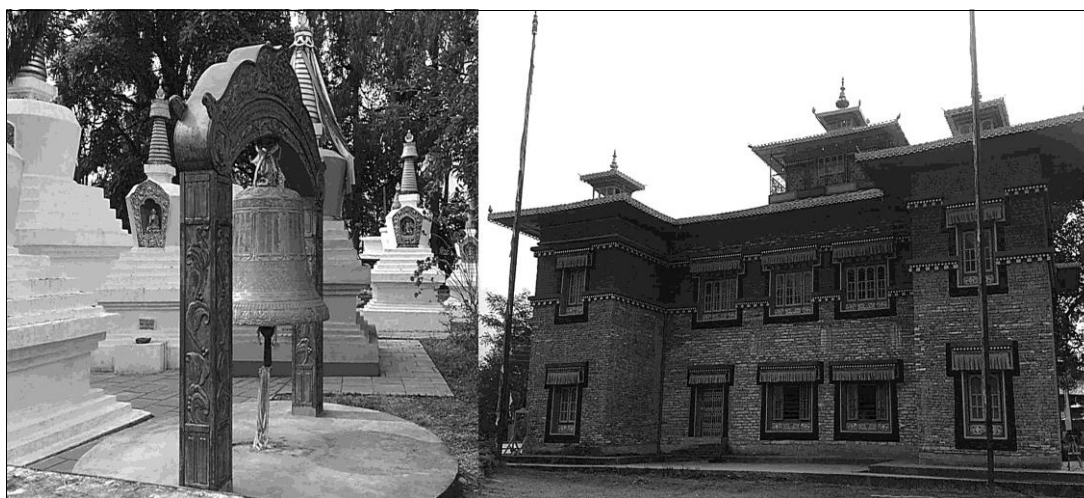


Figure 5. Tashiding, the most revered site of the Buddhists of Sikkim

Pemangstey (Figure 6) is considered as the heart plexus in the sacred landscape of Demazong, which accommodates only the monks belonging to pure Tibetan race, known as ta-sang Lamas. Purity of the heart is further symbolized from the name of the place (*Pema* means lotus, the divine flower and *Yangstey* represents center). The monastery is famous for its Cham dance festival drawing cultural tourists in the month of February every year. It is a festival for driving away the evil spirits through lama dance performance with

costumes and masks worn by pious Lamas. Rabdentse was the ancient capital of Sikkim situated within a bird sanctuary as a protected monument by ASI (Archaeological Survey of India) which is a cultural tourist attraction amidst of natural beauty (Figure 7). It is one of the best viewpoints of snowclad mountains in the region.



Figure 6. Pemayangtse Monastery world renowned for its mask dance



Figure 7. Ruins of Rabdentse Palace and sacred Lake of Buddhists rituals amidst of a bird sanctuary

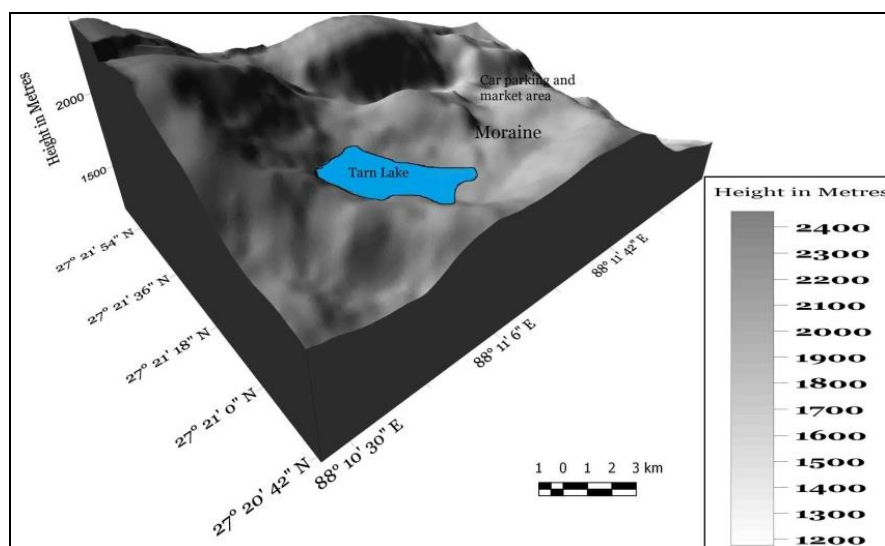


Figure 8. Khecheopalri Lake formed by glacial erosion (Data source: Google Earth Pro, 2020)

Cultural tourism, one of the major growth market worldwide in tourism sector has obtained tremendous popularity in response to changing travel trends and tourist demographics (Wang et al., 2011). It has been emphasized in developing world specially for its substantial contribution on eradication of poverty (Manyara and Jones, 2007). Cultural tourism is already popular in Sikkim utilizing the aforesaid Buddhist heritages and the revival of Monastic trek incorporating non-Buddhist tourists is one of its recent dimensions. As these visitors are not the devoted pilgrims, there is scope of offering the other types of tourism products to them while participating in monastic trek and geotourism is certainly one of them. Geoheritage is the driving force of the geotourism itineraries along with cultural heritage useful in promotion of geotourism landscape (Rodrigues et al., 2011). A better understanding of the earth as the home of man with reference to its

geoheritages is the goal of geotourism which arises from the motivation of enjoying unique features amidst of landscape (Adriansyah et al., 2015). Geotourism has been evolved as a policy instrument for the conservation of earth heritages with a focus on sectoral linkages to achieve an inclusive development (Chakrabarty and Mandal, 2018). Geotourism in the area could be based on following resources:

1. **Lake formed by glacial erosion:** Khecheopalri is a classic example of tarn lake resulting from glacial erosion. The depression of the lake is the product of scooping action (Raina, 1996) while the glacial moraine (Figure 8) is subjected to touristic and cultural use. Parking place and the monastery have been situated over it. A tributary of Rathong Chu is the only outlet of the lake instead the water is standstill in between the hills and morainic formations.

2. **Structural Marvel:** Numerous caves have been resulted due to faulting on previously formed nappe structure. Such caves depending on human accessibility status have been subjected to religious use. Figure 9 represents one of such sacred caves adjacent to Tashiding monastery frequently visited by pilgrims and tourists.

3. **Knick point and waterfall:** A number of waterfalls are situated on this trekking route mostly along the transverse fault line. Phamrong waterfall (Figure 10) and Khangchendzonga waterfall (Figure 11) are among the examples of knick point waterfalls exposing the unique combination of metamorphic and sedimentary rock structure. The landslides took place along the soft sedimentary rocks. The weaker rock strata have been eroded by the headward recession of the waterfalls. Khangchendzonga waterfall is offering Zipline facility for recreational use (Figure 12). Adventure tourism and geotourism thus advance hand in hand.



Figure 9. Sacred trail to reach the holy cave at Tashiding

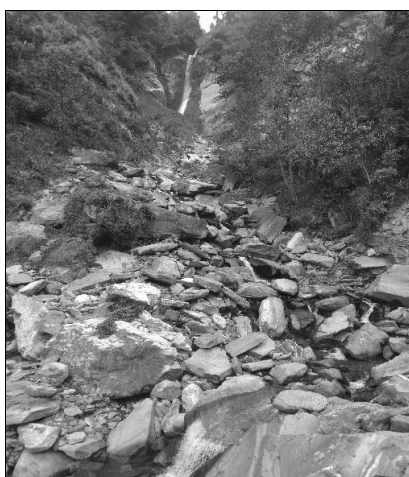


Figure 10. Phamrong Waterfall

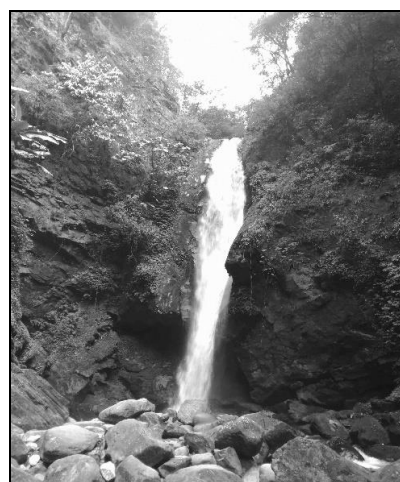


Figure 11. Khangchendzonga Waterfall



Figure 12. Zipline activity at Khangchendzonga waterfall

5. **Ecotourism:** Darap village is located in the West Sikkim district which is approximately six kilometers away from Pelling at the fringe of Khangchendzonga National Park. Darap eco village has been flourished with multiple geosites and its distinctive cultural landscape. The organic cultivation, its orange garden, lake and the view of snow clad peak of Mount Khangchendzonga (from Rani Dunga view point) could be experienced by opting a small trek from Darap village, which is nothing but a geotourism experience.

6. **View of snow clad mountains:** Snow clad peaks can be viewed from Dubdi monastery and Yuksam village which is the part of Mt. Jupon (5650m) of Himalayan belt. Rabdantse is another heritage site famous for offering mountain views. Sunrise on Mount Khangchendzonga is the sole attraction based on which Pelling has grown into a tourist town from a hamlet of the 1990s (Chakrabarty and Das, 2012).

7. **Weathered riverbed with hanging valleys:** With the Rimbi waterfall, the weathered and erosional landforms of Rimbi river bed (Figure 13) resulting from hydraulic action draws the visitors for its ambience as a geotourism paradise. Interlocking spurs and U shaped valley together represents a poly-genic landscape drawing the attention of geotourists.



Figure 13. Rimbi waterfalls downpouring the Rimbi river bed

Khecheopalri, the abode of Tara, the Buddhist Tantric deity is perceived as the thorax in aforesaid anthropomorphism of Demazong. The lake is said to be formed on the depression resulting from the footprint of the deity. It is the place where Rimpoche met Tara. Padmasambhava (Rimpoche) is the incarnation of Lord Buddha in Nyingma tradition and Tara is viewed as His supreme consort. The lake itself is believed as the body of a female deity (goddess Chho Pema), who fulfills the wish of the devotees and the lake is thereby famous as 'wish fulfilling lake' (Figure 14). The lake was originally named Kha-Chot-Palri, meaning the heaven of Padmasambhava, where the Master preached 64 Yoginis (female consorts) to spread Tantric Buddhism (Jain et al., 2004). The word 'Tantric' is derived from Sanskrit word *Tantra* which means the knowledge which is spread to save (Bernard, 1989). This knowledge intruded in Buddhism from Hinduism of India and Padmasambhava, who came Tibet from India as savior of Buddhism was a master of this knowledge. The animistic people of Sikkim was believer of evil spirits and Padmasambhava tamed those by using the weapons of *Tantra* to make Damazong a secure and fertile place for Sikkimese, referred to as 'Sangri La', a heavenly place guarded by spiritual powers.

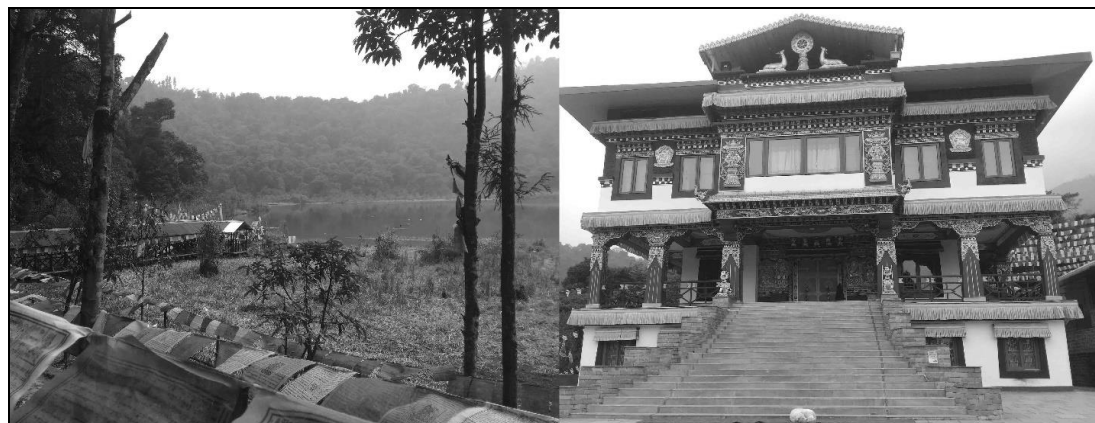


Figure 14. Sacred Khecheopalri Lake and its newly built monastery

According to spiritual belief of Buddhist Tantra, representatives of a compassionate divine feminine power dwell within the geomorphosites. Popularity known as Dakinis and Yoginis, they used to reside within lakes, rivers and caves of Demazong as presiding deities following the mandala principle of *Tantra*. Mandala is the manifestation of sacred geometry for mapping the cosmos graphically with triangles, squares and or circles. As for example in case of Tashiding, which serves as the centre of a mandala, four caves are found in four cardinal directions. Similarly, there are holy caves like Dupukney, Yukumney and Chubkeny constituting Khecheopalri mandala. The word Khecheopalri is constituted by two Bhutia words Khecheo means 'in the middle' and 'palri' means lotus, which symbolizes 'the enlighten mind' of Buddhism (Evershed and Fish, 2006). The Buddhist organizes Chho-Tsho festival on the 14th day of the New Year month of Tibetan calendar to thank the Dakini of the lake for extending them protection for evils. Another festival named Bum-chu is centered to a sacred vase from which sacred water is distributed on the 14th day in the first month of the lunar calendar (Upriy and Sharma, 2012). As similar ritual is practiced in Tashiding Monastery, this is nothing but the serial reproduction as prominent in the Hindu Mother Goddess worship in Tantric mode (Chakrabarty, 2016) as manifested in sacred geography of 'Sakti Pithas' (*pitha* and meaning seat and *sakti* means energy).

Tibetan Buddhism is nothing but a mixture of the pagan ideas of Tibetan Bonpo religion and Tantric Buddhism that came from India. Basically *Tantra* is a ritual oriented mechanism of Indian origin for preparing the mind to reach the divine level. The 8th century Indian monk

Padmasambhava (*Padma* means lotus and *Sambhava* means born form), was the founder of the Nyingme-Pa-Sect (popularly called the 'Red Hats') in Tibet. Buddhist doctrine in Sikkim was primarily the contribution of the followers of Red Hat School who adopted Kalachakra Tantra. *Kalachakra* (literally means wheel of time) is the protector who turns the wheel of life (Gibbons and Pritchard-Jones, 2006) leading to different births of the same soul. Near the entrances of the Sikkimese monasteries, a number of wheels are kept as pictorial manifestation of the endless cycle of rebirth. A Buddha figure is common who offers the teaching on the way out from earthly sufferings in each of the segments of a wheel of life. The goal is *Nirvana* (salvation) from the endless cycle of rebirth following the mechanism of *Kalachakra*, which recognizes the presence of spirits in geomorphosites that influence the travel motivation.

Hotspot analysis has been undertaken from which a heat map is generated (Figure 15). This analysis reveals comparison in the spatial arrangement of given variable (Oxoli et al., 2017). Different attraction factors have been taken into consideration for weightage and rating on the basis of which W-Scores have been derived (Table 3). More is the W-Score, better is the level of confidence and Pelling in the heat map represents a higher level followed by Yuksam. These two are the settlements with urban amenities situated on the monastic trek route.

Table 3. W-Scores derived after weight age and rating for heat map generation (Source: Field Survey, 2020)

Sl.No.	Factors	Place (W-Score)			
		Pelling	Khecheopalri	Yuksam	Tashiding
1	Sunrise and Sunset view	0.45	0.05	0.15	0.05
2	Monastery	0.6	0.2	0.6	0.6
3	Short Trekking	0.15	0.2	0.6	0.1
4	Historical Background	0.6	0.3	0.4	0.2
5	Orange Garden	0	0	0	0
6	Lake	0.1	0.6	0.05	0
7	Waterfall	0.05	0	0.1	0.02
8	National Park/Sanctuary	0	0.05	0.6	0
9	Religious Attraction	0.6	0.45	0.2	0.45
10	Seasonal Fair	0.6	0.1	0.05	0.3
11	Cave	0	0.2		0.45
Total Score		3.15	2.15	2.75	2.2

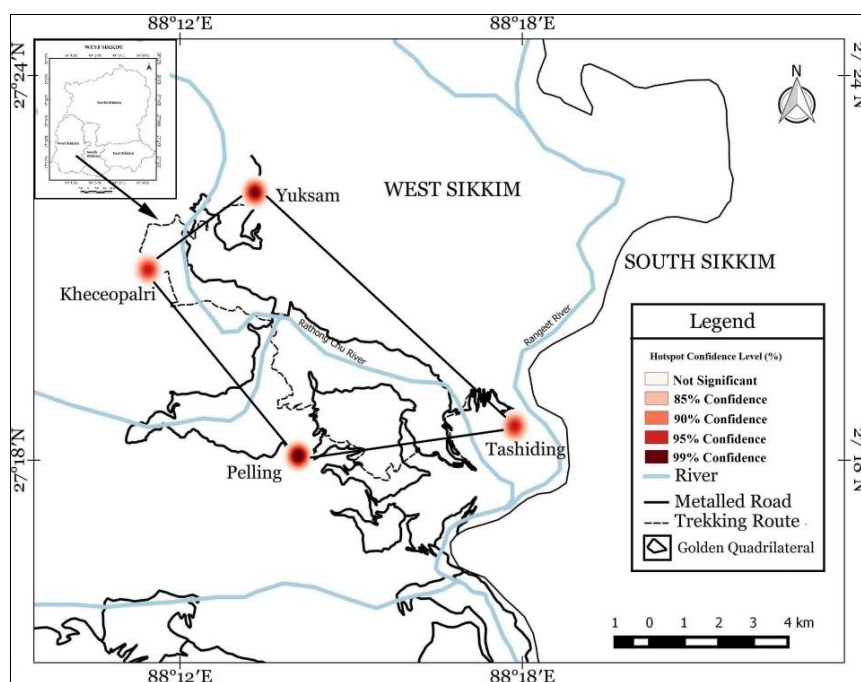


Figure 15. Heat map for the area of Sacred Quadrilateral of West Sikkim (Source: Prepared by the authors, 2020)

Table 4. SWOT analysis for Khecheopalri (Source: Prepared by the Authors, 2019)

STRENGTHS	WEAKNESSES
1. A monastery with a beautiful sacred lake. 2. Availability of basic infrastructure. 3. Conservational awareness. 4. Ideal for the beginners in experiencing the mountain trek.	1. Seasonality. 2. Lack of homestay development. 3. Lack of adequate marketing. 4. Underdeveloped transport infrastructure
OPPORTUNITIES	THREATS
1. Incredible ecotourism package. 2. Safe and secure visitor friendly environment. 3. Lake centric folklore encouraging ethno religious tourism development 4. Local food and drinks especially foreign tourist satisfaction.	1. Landslides and other natural hazards. 2. Non-availability of emergency medical services. 3. Less community involvement. 4. Inadequate conservational strategies to protect nature and culture.

As the confidence level found in case of Khecheopalri is comparatively late, this particular site has been taken for a case study with application of SWOT analysis. The responses of the trekkers have been incorporated in order to analyze the viability of the plan from the standpoint of potentiality of its success. The sustainable development of cultural tourism heavily relies on community participation, particularly from the perspective of the protection of cultural heritage (Fadli et al., 2019). This is why for Khecheopalri, less community

involvement is categorized as threat, not merely a weakness. The quality of visitors' experience is one of the main aspects for assuring and monitoring sustainability in tourism sector (Mascardo and Woods, 1998) and this is why ecotourism packages as a blended product of geotourism and Buddhist tourism has been identified as one of the opportunities (Table 4). It appears as second ranking opportunity followed by the safety and security urge (Table 5) which is the basic need for any guest anywhere in the world.

Table 5. Pair wise Comparison Matrices for SWOT factors (Source: Prepared by the Authors, 2019)

SWOT group	Strengths (S)	S1	S2	S3	S4	Priorities of SWOT factors/Local Weight
Strengths	A monastery with a beautiful sacred lake	1	5	2	1	0.393595
	Availability of basic infrastructure		1	1	1/3	0.112628
	Conservational awareness			1	1/2	0.155391
	Ideal for the beginners in the mountain trek					0.338386
CI = 0.0266979, λ_{max} = 4.08009, CR = 2.9664						
Weaknesses	Weaknesses (W)	W1	W2	W3	W4	Priorities of SWOT factors/Local Weight
	Seasonality	1	1/3	1/2	1/3	0.106942
	Lack of homestay development		1	3	1	0.383201
	Lack of adequate marketing			1	1/2	0.168239
	Underdeveloped transport infrastructure				1	0.341618
CI = 0.0152731, λ_{max} = 4.04582, CR = 1.6970						
Opportunities	Opportunities (O)	O1	O2	O3	O4	Priorities of SWOT factors/Local Weight
	Incredible ecotourism package	1	1	2	3	0.29259
	Safe and secure visitor friendly environment		1	2	3	0.415493
	Lake centric folklore encouraging ethno religious tourism development			1	3	0.184948
	Local food and drinks especially foreign tourist satisfaction				1	0.106969
CI = 0.0236709, λ_{max} = 4.07101, CR = 2.6301						
Threats	Threats (T)	T1	T2	T3	T4	Priorities of SWOT factors/Local Weight
	Landslides and other natural hazards	1	2	1/2	2	0.285547
	Non-availability of emergency medical services		1	1	1	0.204808
	Less community involvement			1	2	0.346193
	Inadequate conservational strategies to protect nature and culture				1	0.163452
CI = 0.0618392, λ_{max} = 4.12132, CR = 6.8710						

From SWOT priorities (Table 5), it appears that the appeals of the sacred lake and monastery are immense, particularly for the geotourists. This comes out as the dominant strength supported by the scope of promoting ecotourism packages utilizing such resources considering as opportunity. Accommodation appears as major weakness rather than accessibility and failure in searching homestays generates a feedback among the respondents on less community involvement, which is conceived as most important threat not only for tourism business but also for the protection of the environment and sanctity of the sacred place. The strategic lacuna on protecting nature and culture has been obtained the lowest rank in threat perception, might be due to the fame of Sikkim on environmental concerns. It is noteworthy to mention that Sikkim was the first Indian state to ban disposable plastic bags in the year 1998 and also delineated a reserved area to preserve the Buddhist culture of Lepchas. Through the government is recently criticized in various platforms on its recent conservational failures (for which this has been enlisted as a threat), still there is faith of respondents on government policies as revealed from SWOT findings. To overcome weakness in marketing the new product like monastic trek and the threat arising from less community involvement, raising of a trained guideforce from local youth may be a sustainable strategy. Such guides along with their specialized job experiences simultaneously encourage tourists to acquire local products and promote host-guest interactions (Tătar et al., 2018). To address the inadequacies in the conservation strategy to protect culture which is also identified as a threat, raising of awareness and respect on material and spiritual importance of the objects composing the ethnographic heritage (Deac et al., 2019) is important for which museums of the monasteries should be revitalized. Since the lack of homestay development comes out as the most serious weakness from SWOT analysis, exploration of rural tourism potentials at micro regional and local spatial level for the purpose to take the area out from geographical isolation through sustainable utilization of existing infrastructure (Dezsi et al., 2014) is the only strategic option remains for ensuring optimal use of resources in monastic trek circuit development.

CONCLUSION

The Demazong at the vicinity of Khangchendzonga National Park is a geotourism landscape with natural beauties that attracts cultural tourists for its myths, legends and tales. Those folklores having affinity with geomorphosites provide ample scope of symbiosis between geomorphosite tourism and cultural heritage tourism. Geotourism is a serious leisure oriented activity (Chakrabarty and Sadhukhan, 2019). Combining geotourism with Buddhist tourism would be a strategy to satisfy the ego of the educated international Buddhist travellers, who as trekkers being engaged simultaneously in serious leisure (Hamilton-Smith, 1993). Ego tourism is nothing but a function of serious leisure in which the tourists have opportunities to satisfy their ego by expressing their abilities, fulfillment of their pursuit and identify themselves as unique human beings (Stebbins, 1982). The provision of Zip line at Khangchendzonga waterfall site is example of an arrangement to serves such purpose. Bird watching in the wilderness is an additional attraction for the Khecheopalri since the lake has been a resting place for Trans-Himalayan migratory birds. It supports recreational aspect of nature tourism despite of the fact that fishing and boating is strictly prohibited in the lake on account of religious taboo (Jain et al., 2000).

Arrival of huge number of visitors was alarming for Khecheopalri at the end of previous century leading to deterioration of the aesthetic, spiritual and biodiversity values (Maharana et al., 2000). For earning revenue, the cultural landscape has been exposed to people of different cultures and the transition from pilgrimage to tourism as its consequences created wider social impacts. Mass tourism is largely the outcome of the arrival of daily picnicking crowd, mostly from Yuksam (about 40 Km) by motor vehicles. Deriving a sustainable operational mechanism by assuring community involvement for reduction of environmental stress on landscape as maximum as possible is the ultimate goal for which geotourism development is emphasized along with nature tourism and cultural tourism.

Holistic research in this field requires integrated handling and management of data using technology for planning, preserving and designing of various customer services (Jamieson, 1998). The alternative planning to promote sustainable tourism recommends for the restriction of tourist vehicles from Yuksam encouraging a trek for the visitors while motor vehicles may be available only for pilgrims who are unable to trek. However, a critical appraisal is essential before marketing a monastic trek combined with geomorphosite tourism in Demazong with reference to the carrying capacity and vulnerability assessment of both physical and cultural environment.

Acknowledgement

The authors would like to express their gratitude to the *Lamas* of the Pemayangtse, Dubdi and Tashiding monastery for extending all possible support during the field surveys.

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Article history:

Received: 11.06.2020

Revised: 04.08.2020

Accepted: 02.09.2020

Available online: 22.09.2020