

Tourism Potential of Geomorphosites: A Comparative Assessment of Selected Beach Sites in Malvan Tahsil, Sindhudurg Coast of Maharashtra (India).

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Abstract

Present research was carried out at the coast of Malvan Tahsil, Sindhudurg district of Maharashtra. The objective of the research is to assess the tourism potential of Geomorphosites. Data are obtained from field survey, observation, interviews and discussion with subject expert, local people and service providers. This research possesses an overview of the theoretical and applied studies which may contribute to geomorphosites. The article formulates a simple methodology to quantify tourism potential of geomorphosite. Methodology is adopted from previous authors and their valuable research and partly modified by author. This method is quantitative but series of qualitative guidelines has been elaborated in order to support tourist value of geomorphosites. In the comparative assessment of geomorphosites and potential of sites at study area correlate between tourism value of geomorphosites (Scenic, Scientific, Cultural and Socio-Economic) and the global value were made. The result shows that Malvan Tahsil of Sindhudurg district has lots of potential in terms of Scenic beauty of landscapes, Natural diversity, Ecological importance, Representativeness, accessibility. However, some limitations due to weakness of Cultural value, Traffic, intactness of the area, weak protection etc. Author come to conclusion that the evaluated some geomorphosites are most suitable for tourism development where as some are unsuitable/unfavourable for tourism activity and sustainable tourism development.

Keywords: *Geomorphosites, Tourism Potential, Tourism Value, Beach Sites, Comparative Assessment.*

Introduction:

It is possible to assess the potential and exploitation of geomorphological sites by using four different tourist assessment values viz. Scenic/ Aesthetic, value, Scientific value, Cultural value and Economic value in relation to degree and modality, the assessment method useful for comparison of tourist value of Geomorphological sites and tourist potential with their actual use (Pralong, 2005). Every geomorphosite

located within particular landscape, current landforms are the result of three evolution viz. history of the rocks, history of the tectonic activity and history of landforms (Reynard, 2005). Geotourism may be defined as a combination of tourist goods, services and infrastructure development in order to promote its geological and geomorphological sites in specific area combination with other parts of natural and cultural heritage viz. Archaeology, ecology and history (Reynard, 2008).

Potential areas are particularly attractive for recreational activities, but it is needed to provide a level of activity that will not jeopardise, but rather increase the attractiveness of the destination (Obrenic et.al. 2015). Geosites and Geomorphosites are valuable in local, regional and national scales which are identification, inventory and scientific documentation. They are also valuable for assessment of geodiversity in area. Additional evolution of Geosites and geomorphosites in view of accessibility and potential tourist interest is necessary in order to recognise their actual value for geotourism. It also creates opportunities for protection of geological and geomorphological heritage as a value by its own right (Anna and Zdzislaw, 2010). The information of scientific touristic and protective values of prepared in section of tourism and management which eventually analyzed with descriptive analytical method. The result in this research showed it had lots of potential in terms of ancient geography, landscapes, accessibility, representativeness, vulnerability and ecological effect. It also had some limitation due to non-intactness of the area, weakness of cultural values, high sensitivity, risk and administrative protection (Sabzeyari and Mirazizi, 2014).

Objective

1. To assess the Tourism potential of geomorphosites.

Study Area:

Malvan Tahsil is a coastal Tahsil located in western part of Sindhudurg district. The district is surrounded by the Devgad Tahsil on the north, Kankavli and Kudal Tahsil on the east, Kudal and Vengurla Tahsil on

the south and Arabian Sea on the west. The geographical extent of Malvan district is 16⁰⁰' north to 16⁰⁵' north latitude and 73²⁵' east to 73³⁰' east longitudes. Malvan Tahsil of Sindhudurg coast is reach with geomorphological sites. Beaches with creeks are very common features, clean and white sand with rich geodiversity are potential for tourism development in this area. Physical landscapes play significance role in the development of tourist activity; basically geomorphological features with beautiful scenario are key factor in leisure tourism at this destination.

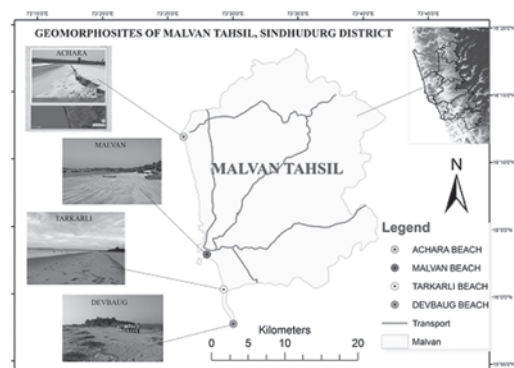


Fig. 1

Methods

In the present study tourism potential of various Geomorphosites assessed by using various models which used by previous authors. In the last two decades several authors contributed to evaluate the quality of Geomorphosites in various contexts. In the evolution of tourism potential assessment multi criteria decision making tools are widely accepted by research scholars and decision makers (Mamun and Mitra, 2012). Suryawanshi (2014) stated that the assessment of tourism potential showed

that there is high potential of tourism in terms of landscape, landform and cultural aspect. For the assessment of tourism potential he used weights, the weights were assigned on the basis of the value of variable. Began and Visnic (2015) argued that the Geosites Assessment Model (GAM) is suitable for identifying the most attractive Geosites, planning and management of georesources. Model is also suitable for the application of natural resources for geotourism. South eastern Serbia is reach with geomorphological features which is true value for geotourism development; most valuable features of these remarkable creations are the uniqueness and preservation of Geomorphosites. Geomorphosites have great potential if located in protected area to be acknowledged as natural and touristic resources with economic benefits (Zouros, 2007). Many the analysis of geotourism there are three sub systems of Form, Processes and Tourism. Where form are landforms, landscapes, rocks, sedimentation, fossils, processes are tectonic, volcanic, weathering, deposition, erosion etc. and tourism include attraction, accommodation, activities,

planning and management (Reynard, 2008). He added that Geomorphosites assessment initially developed within environmental impact assessment (EIA) context, therefore it clearly oriented towards the protection of valuable sites not it has moved to the domain of tourist promotion of the Geosites, thus the recent methods are not only useful to assess the scientific quality of sites but also their effective use and potential. The evaluation is made based on model proposed by Jean-Pierre Pralong (2005) and various other research scholars' techniques and models. The tourism is established as arithmetic mean using following formula,

$$V_{tour} = (V_{Sce} + V_{Sci} + V_{Cult} + V_{Eco}) / 4$$

Whereas,

$$V_{tour} = \text{Tourism Value}$$

$$V_{Sce} = \text{Scenic/ Aesthetic Value}$$

$$V_{Sci} = \text{Scientific Value}$$

$$V_{Cult} = \text{Cultural Value}$$

$$V_{Eco} = \text{Socio-Economic Value}$$

In order to calculate tourism values following criteria were used,

Table no.1: Tourism Value: Criteria and Scores

1. Scenic Value: (Sce.)					
Criteria	Scores				
	00	0.25	0.50	0.75	1
No of View Points	-	Single	2 or 3	4 to 6	More than 6
Average Distance To View Point (Meter)	-	Less than 50	Between 50-200	Between 200-500	More than 500
Water Clarity	Turbid	Partially Turbid	-	Partially Transparent	Transparent
Colour with Site Surrounding	Identical		Different		Opposite

2. Scientific Value: (Sci.)					
Representativeness	Nil	Low	Moderate	High	Very High
Uniqueness/ Rarity	More than 7	5-7	3-4	1-2	Unique
Integrity	Destroyed	Strongly deteriorated	Moderately deteriorated	Weakly deteriorated	Intact
Beach Type	Mud with Steep Rock	Mud	R o c k y Black Sand little steep	White Sand few Rocks	White Sand
Beach Slope (0°)	40 or More	30-40	20-30	10-20	Below 10
Ecological Interest	Nil	Low	Moderate	High	Very High
3. Cultural Value: (Cult.)					
Cultural Relevance	Without Linked	Weak Linked		Strongly Linked	Initiary of Customs
Historical/ Archaeological Relevance	No Vestige or Building	Weak Relevance		High Relevance	Very High Relevance
Cultural Arts/ Events	Never	-		-	At least once a Year
Religious/ Metaphysical Relevance	No Relevance	Weak Relevance		High Relevance	Very High Relevance
4. Socio-Economic Value: (Eco.)					
Traffic- Accessibility					
Natural Risk					
Annual No. of visitors					
Official Level of Protection					
Attraction Level					

Source: Based on model proposed by Jean-Pierre Pralong (2005), Modified by Author.

Table No.2: Geomorphosite and their attractions

Geomorphosite	Name of Geomorphosites	Attractions
GM 1	Achara	Beach with Creek
GM 2	Malvan	Beach, Malvan Fort, Coral, Marine Sanctuary
GM 3	Tarkarli	Beach with Creek
GM 4	Devbaug	Beach with Creek, Island

Result and Discussion:

Table 3:

1. Scenic Value: (Sce.)						
Geomorphosites (beach site)	Scores					Total
	Sce 1	Sce 2	Sce 3	Sce 4		
GM 1	0.50	0.25	0.50	0.50	0.437	
GM 2	0.75	0.75	0.75	0.75	0.75	
GM 3	0.75	0.50	0.75	0.75	0.687	
GM 4	0.75	0.75	0.75	1	0.812	

2. Scientific Value: (Sci.)							
	Sci 1	Sci 2	Sci 3	Sci 4	Sci 5	Sci 6	Total
GM 1	0.25	0.25	0.25	1	0.25	0.50	0.416
GM 2	0.50	0.75	0.75	0.75	0.50	1	0.708
GM 3	0.75	0.50	0.50	1	0.75	0.75	0.708
GM 4	0.75	0.50	0.50	1	0.25	0.75	0.625

3. Cultural Value: (Cult.)					
	Cult 1	Cult 2	Cult 3	Cult 4	Total
GM 1	0.50	0.25	0.50	0.50	0.437
GM 2	0.50	1	0.50	0.50	0.625
GM 3	0.50	0.25	0.50	0.50	0.437
GM 4	0.50	0.25	0.50	0.50	0.437

4. Socio-Economic Value: (Eco.)						
	Eco 1	Eco 2	Eco 3	Eco 4	Eco 5	Total
GM 1	0.50	0.25	0.25	00	0.50	0.30
GM 2	0.50	0.50	0.75	0.25	0.75	0.55
GM 3	0.50	0.50	0.75	0.25	0.75	0.55
GM 4	0.50	0.25	0.50	0.25	0.50	0.40

Table No. 4: Tourism Values of Geomorphosites

Geomorphosite	Scenic Value	Scientific Value	Cultural Value	Economic Value	Tourism Value	Potentiability
GM 1	0.437	0.416	0.437	0.30	0.397	Less

GM 2	0.75	0.708	0.625	0.55	0.658	More
GM 3	0.687	0.708	0.437	0.55	0.595	More
GM 4	0.812	0.625	0.437	0.40	0.568	More

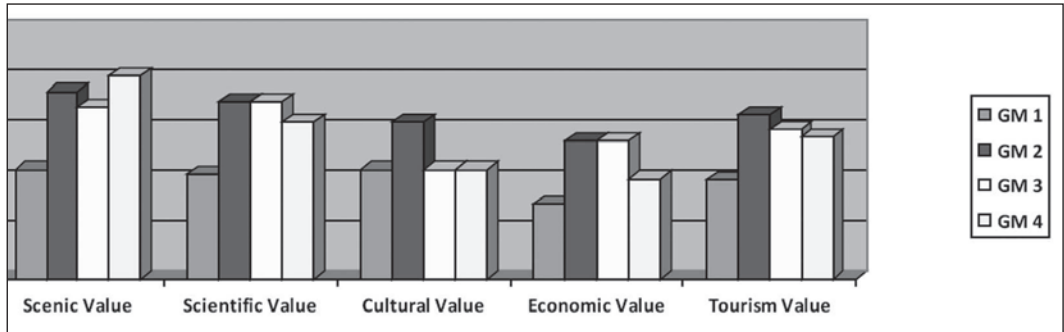


Fig. 2 – Tourism Value of Geomorphosites

In order to assess the current use and tourism potential of geomorphosites at Malvan Tahsil, four beach sites were selected, which classify and assessed on the basis of four different values. Table No.3 showed the result of comparative analysis of tourism potential of four geomorphosites of GM 1 (Achara), GM 2 (Malvan), GM 3 (Tarkarli) and GM 4 (Devbaug) on the context of Scenic/Aesthetic, Scientific, Cultural and Economic values. The result showed (Table No. 4 and Figure No.1) that scenic/aesthetic value and scientific value of these sites were registered/obtained highest tourism value where as cultural and economic value granted to be lowest tourism value. GM 2 (Malvan) site obtained highest tourism value of 0.658, where as GM 1 (Achara) obtained lowest tourism value of 0.397. GM 2 (Malvan) 0.658, GM 3 (Tarkarli) 0.595, and GM 4 (Devbaug) 0.568 sites obtained more than 0.50 score,

it means these sites having more potential for tourism development. However GM 1 (Achara) has score of 0.397 is less than 0.50 score; it means this site having less potential for tourism development.

Conclusion

In the development of tourism in these geomorphosites Complex geological structure, geomorphological processes and the history of landscapes are key factors. This is provided high variety of geodiversity of tourism development. With regard of potential of geomorphosites GM 2 (Malvan) registered highest tourism value (0.658), GM 3 (Tarkarli 0.595) and GM 4 (Devbaug 0.568), due to steep slope (30⁰-40⁰) and poor accessibility. Achara geomorphosite (GM1) registered lowest tourism value. This beach is risky for recreational activity. Evaluation of proposed geomorphosite lead to concluded

that Malvan, Tarkarli and Devbaug possess' high level of tourism value, it means these sites are favourable for recreation activity and tourism development. However these geomorphosites are characterised with low level of economic and cultural value because of traffic problems due to very small roads, very few entrances to reach on beaches and entrance through private property (eg. Tarkarli), poor security levels are the obstacles in the development of tourism.

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