CARRYING CAPACITY ANALYSIS IN MIZORAM TOURISM

Ghanashyam Deka [1,*] **& Rintluanga Pachuau**[2]

[1]Department of Geography, Pachhunga University College, Aizawl, Mizoram

[2]Department of Geography & Resource Management, Mizoram University, Aizawl, Mizoram

*Corresponding Author: assameseguy@gmail.com

Ghanashyam Deka: https://orcid.org/0000-0002-5246-9682

ABSTRACT

Tourism Carrying Capacity was defined by the World Tourism Organization as the highest number of visitors that may visit a tourist spot at the same time, without causing damage of the natural, economic, environmental, cultural environment and no decline in the class of visitors' happiness. Carrying capacity is a concept that has been extensively applied in tourism and leisure studies since the 1960s, but its appearance can be date back to the 1930s. It may be viewed as an important thought in the eventual emergence of sustainability discussion, it has become less important in recent years as sustainability and its associated concepts have come to dominate planning on the management of tourism and its impacts. But the study of carrying capacity analysis is still an important tool to know the potentiality and future impact in tourism sector. Thus, up to some extent carrying capacity analysis is important study for tourist destinations and states like Mizoram. Mizoram is a small and young state with few thousands of visitors that visit the state every year. But with the existing facilities will it be okay for future planning is significant to study. Hence, this paper is an attempt to study the carrying capacity of Mizoram Tourism with some selected destinations.

Keywords: *Carrying Capacity, Sustainability, Tourism, Delphi Analysis.*

Introduction

With regards to the travel industry, a significant related issue to be talked about is the carrying capacity analysis for example all the more explicitly, the ideal number of sightseers that can give to day by day visit without influencing the balance. It is to be noticed that there has been much enthusiasm for the idea of carrying capacity as a part to the travel industry's prospective study. While it is helpful to recognize the carrying capacity limit of a destination that used for the travel industry, yet the perception may not be a straight forward a decision-making tool.

According to Roy and Tisdell (1998), the carrying capacities and its idea are neither distinct nor specific. In fact, it is a relative and dynamic idea in tourism. Carrying capacity of a specific site or region might be viewed as a component of various factors like the number and choice of traveler assets, for example, the existence of historical sites, biodiversity reserves, plants and animals, quality of the air or water, the tolerance and fragility of resources to use the power of resource, the provision and maintenance of infrastructural services, and so on. In a very simple way let us consider that the main issues with the carrying capacity of a tourist destination are in terms of visitors' numbers in light of income, available tourist infrastructure, weather and climate with associated environmental issues and their reaction to the destination along with the quality and services.

The idea of carrying capacity was used successfully by Mitra and Chattopadhyay, (2003) in their study of "Environmental Conservation and Demand for Nature Based Tourism in Arunachal Pradesh" which is further followed along with the techniques of Green *et al.* (1990) in their study of environment and its impacts in England. The study was borrowed from the idea of Tisdell (1997) which was the study about the 'aspects of sustainability of eco-tourism.' Thus the idea is now applied with the tourism study for sustainability and development of tourism.

Mitra and Chattopadhyay (2003) referred that "*the Delphi technique (Dietz, 1987; Green et al, 1990; Rowe et al., 1991; Rowe and Wright, 1999) was used which is considered as a potentially valuable technique for identification and assessment of the impacts of tourism. The Delphi technique is one of group of judgmental methods, which have gained recognition for their value in forecasting. It is one of the most well established means of collecting expert opinion and of gaining consensus among experts on various factors under consideration. While Delphi originated as a technique of future forecasting research, it's more general applicability is now widely accepted, including its potential contribution to environmental impact assessment (EIA).*"

Following Mitra and Chattopadhyay (2003) the present study is carried out for Mizoram with reference to Aizawl city museum, Kolasib, Zokhawthar, Thenzawl, Reiek, Phawngpui and Lawngtlai by using the Delphi technique of analysis. The Delphi method of examination is one of the well-established ways to gather expert's assessment. Truth be told, when the review was directed for gathering the expert's feeling of the effect of the tourism industry on the travel industry parameters the study was likewise reached out to gather the expert assessment in regards to the ideal number of visitors in the chosen places of interest of Mizoram that could be obliged day by day without antagonistically influencing the neighborhood condition, by providing them with information in regards to the physical highlights of the places of interest and the present yearly inflow of tourists.

Mizoram is a young state with a few recognized tourist destinations. In the state most of the destinations are scattered in nature. Therefore it is difficult to interlink
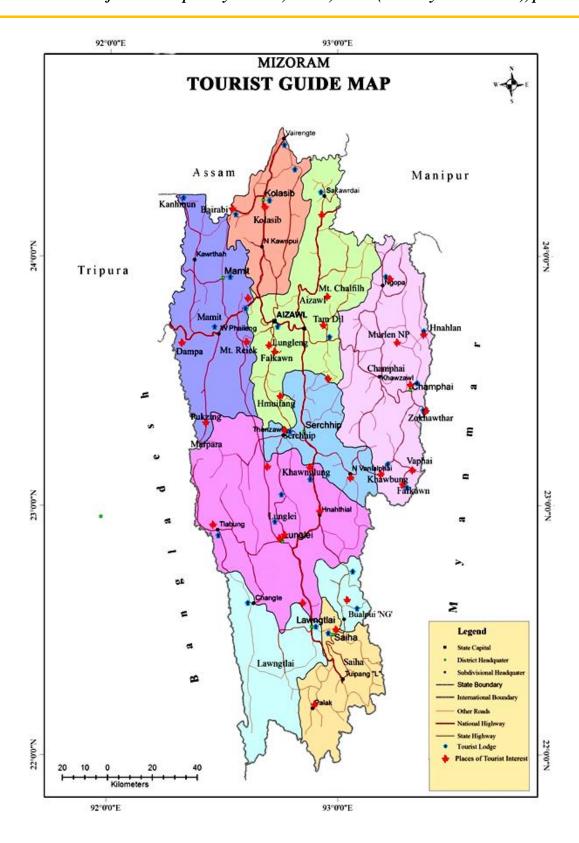
Figure 1: Tourism Guide Map of Mizoram

all the destinations with some grids or circuits. Hence few tourist destinations in the state is growing and getting visitors in a regular basis. With the advancement of tourism it is always demanded better communication, accommodation, quality of food supply and so on. Thus with the increasing demand of the destination there is a gap that develop between the host and the guests where the carrying capacity can be analyzed and interpreted. To find out this gap it is important to know the carrying capacity of Mizoram tourism. It may help us in future course of action for betterment of state tourism.

Objective

Present paper is an attempt to study the carrying capacity of Mizoram tourism with reference to eight selected destinations.

Database and Methodology

Both primary and secondary data are used in the present study. Delphi technique is used widely for the carrying capacity analysis. Questionnaire was prepared for three rounds of Delphi techniques of analysis accordingly. The first questionnaire is an estimation that roughly calculated based on the revenue and average number of visitors. Based on the first questionnaire, remaining two questionnaires are modified considering the responses of the planners, hosts, environmental experts and other stack holders associated with the state tourism. Thus after three rounds, it gives an estimation which is optimum in general and fit for comparative study in particular. Later on the comparison of secondary data which collected from the tourism department and other authentic sources were tabulated side by side along with the third round of Delphi data.

After considering the average night spent by the tourists along with the existing facilities in the area, optimum number of visitor estimation was calculated to know the present carrying capacity of the selected tourist destinations. Finally the actual number of visitors was put side by side with the estimated number of visitors for the study of carrying capacity.

It is important to note that the estimation of experts were mainly taken to identify and assess the possible negative impacts of tourism on ecological parameters and the best possible number of tourists that can be catered to daily in the selected tourist spots of Mizoram without affecting the ecosystem adversely.

The Study Area

The present study area is the Mizoram state as a whole with consideration of eight important places that selected one from each district. State museum is representing the Aizawl district followed by Kolasib town (Kolasib), Zokhawthar (Champhai), Reiek (Mamit), Thenzawl (Serchhip), Phawngpui (Siaha/Saiha), Lunglei (Lunglei) and Lawngtlai (Lawngtlai). Out of these, State Museum, Reiek, Zokhawthar, Phawngpui and Thenzawl are notable tourist destinations in the state. Apart from these Lunglei, Lawngtlai and Kolasib are the important places and district headquarters that accommodate hundreds of tourists during the peak season.

The state museum is well known destination that displays the art, culture and history of Mizoram. It is considered as one of the must visit place in Mizoram. On the other hand Reiek is a famous destination that attracts visitors for its historical, geographical and geological importance. Every year it attracts large number of tourists during the Anthurium festivals. Thenzawl is in the mid way to southern Mizoram that allow tourist to see its scenic beauty along with the Vantawng Fall the largest waterfall in Mizoram. It is an ideal location for the excursionists and the cruisers that give a pleasant stay for leisure. Zokhawthar is another famous border town that connects with Myanmar. This destination is well known for nearby Rih Dil Lake (5 km. inside Myanmar) which has mythological importance among the Mizos. After crossing the 'rice bowl of Mizoram' one can visit Zokhawthar and Myanmar in the same route without any problems which makes Zokhawthar as one of the important tourist destination. The Phawngpui is located in the southernmost part of Mizoram which is the highest peak in the state. It is also famous as Blue Mountain in many websites that describe about Mizoram Tourism.

Thus out of the eight selected destinations five are well spotted in the tourism map of Mizoram. The reaming also serves the tourist well in the sense of accommodation and recreation.

Carrying Capacity Analysis

The carrying capacity can be determined based on the social, cultural, economic and tourism existence which specialists used to consider significant for a selected destination. Similarly carrying capacity is considered as a function of the existing infrastructural facilities. The mountainous region like Phawngpui, the most extreme individual from guests permitted in a timeframe could be determined to the premise of the enthusiastic effect of travelers' activities on genuine aspects of transportation, seasonality, and the environmental and ecological conditions. However, the tourist inflow may be varying based on different factors like infrastructure, transportation and other associated facilities with the destination. Mitra and Chattopadhyay (2003) further referred the critical infrastructural facilities as the quantity and quality of accommodation, purity and availability of drinking water, waste management facilities that generated during the travelling etc. These factors may be considered as the determining factors that can be establish as the base of carrying capacity analysis for a tourist destination.

Generally in most of the time the local people (host) and tour operator (planner) can observe a destination whether it is overcrowded or not. To understand the carrying capacity well, researcher have to consider the ideas of the locals and the tour operators too. Therefore, the researcher collected the information from all possible sources to know the carrying capacity of a destination. For that the opinion of the host, tour operator, planners and other associated stack holders are accounted for this analysis. It was an attempt to estimate the usual rate of visitors to know the carrying capacity for everyday for a selected location during their visit to Mizoram as supposed by the special-

Table 1: An Approximate Estimate of Carrying Capacity per day of the selected tourist destinations of Mizoram as perceived by the experts, planners and local people

Selected destinations	*Total no. of lodges/ beds in the district	Income from tourism (in Lakh)	Estimated no. of tourist per day	Average no. of tourist per day (Delphi round 1)	Average no. of tourist per day (Delphi round 2)
State Museum (Aizawl)	121 / 249	107.41	173	182	210
Kolasib (Kolasib)	42 / 94	27.10	43	55	64
Lunglei (Lunglei)	64 / 136	23.19	37	38	39
Zokhawthar (Champhai)	64 / 132	20.56	33	33	33
Thenzawl (Serchhip)	40 / 75	19.75	34	44	51
Reiek (Mamit)	37 / 73	12.13	19	30	38
Phawngpui (Siaha)	20 / 40	6.30	10	10	11
Lawngtlai (Lawngtlai)	48 / 102	5.16	8	8	9

Source: *Statistical Abstract of Mizoram, 2015.
Delphi data set is collected by the researcher as primary data

-ist, trip and tour planners, authorities, the hosts and neighbors. Following this idea, table-1 gives an approximation of tourist carrying capacity as supposed by the professional, tour planners, and the host in some particular tourist destination of Mizoram.

On the basis of the accommodation facilities along with the tourism revenue and estimated visitors the approximation of carrying capacity to the destinations is analyzed with the help of Delphi analysis technique. This estimate is based on the locals, experts and planners perception which later considered as the approximate number of optimum visitors in those selected tourist destinations of the state during the year 2014. From the above table (table-1) it is clear that State Museum that located in the center of the capital city scored highest possibilities of tourists in a year. Of course it has better connectivity, accommodation and other associated facilities. Kolasib is in the second spot as it is near to the Assam border that connects via Vairengte and Bairabi which has great importance for the state economy since most of goods and passengers along with the tourists passes through this way. Kolasib is the first stop for the traveller. Therefore, it has overtaken the other tourist destinations like Zokhawthar since these are located remotely. Thenzawl placed in the third after the Delphi analysis as it is in the midway to the southern Mizoram. Vantawng fall gives

Table 2: Approximate estimation of tourists against actual number of tourists

Selected Destinations	Carrying capacity per day	Average number of days spent by Tourist	Approximate number of days of tourist season in a year (2014)	Approximate estimate of optimum tourist in a year (2014)	Numbers of tourist visited the spot (2014)
Aizawl City Museum (Aizawl)	210	3.0	300	21000	11,997
Kolasib town (Kolasib)	64	2.6	240	5907	*3, 600
Lunglei Museum (Lunglei)	39	2.2	210	3722	2,423
Zokhawthar border (Champhai)	33	2.0	210	3465	1,710
Vantawng (Serchhip)	51	2.0	210	5355	#3750
Reiek (Mamit)	38	1.5	180	4560	*4600
Phawngpui (Siaha)	11	1.0	180	1980	*1200
Lawngtlai (Lawngtlai)	9	1.0	180	1620	#922

Source: Economic and Statistical Handbook, 2014

*Tourism Department estimation.

#Primary data collected by the researcher from nearby hotels, lodges, NGO's etc.

Thenzawl an extra weightage as it is the largest water fall in the state. Lunglei, Reiek and Zokhawthar are placed accordingly as there are limitations like location, lack of accommodation facilities, lack of all weather roads etc. Phawngpui and Lawngtlai are at the bottom of the table due to the distance factor. Poor connectivity, lack of publicity, and cost effect travel associated with these two locations.

With the help of above data (Table 1) now average carrying capacity can be compared with the actual data available with the researcher. With consideration of average night halt, length of the tourist season the approximate estimation was found out consequently. After that the real number of tourist visit to those selected places are compared with the calculated estimation of tourists. The following table (Table 2) is showing the comparison in details.

Table 2 shows that the real numbers of tourists visiting the selected destinations were not exactly even the traditionalist gauge of rough number of optimum tourists who could visit the selected destination of Mizoram based on carrying capacity study. As per the data six selected destinations are falling short of tourists against the estimation. Among the destinations Reiek seems to have excess load than the carrying

capacity. It had been discovered that the real number of visitors in 2014 was 63.69% of the approximate estimate to optimum number of tourists.

Conclusion

From the above discussion and analysis it is clear that Mizoram tourism is yet to develop to its full strength. For example, Aizawl is the capital city that still carrying the load less than half of its estimated capacity. It is important to note that if the carrying capacity is at optimum level than it used to register the maximum growth. It can produce highest benefits to the stack holders, investors, and the host if it is at the optimum level. Still the state tourism is far below than the estimated load. Hence, it sought for increasing the quantity of visitors in Mizoram in future that can manage more loads and can maintain sustainability of tourism industry as well as for highest probable exploitation of economic potentiality of tourism. Again, in near future if the real number surpasses the most favorable number in any year, by the increasing of the days in a tourist season may provide accommodation to more visitors which indicate glowing future of Mizoram tourism as a whole.

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