

## Measuring the Sustainability of Tourism Development in Kashmir

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### Abstract:

*In general, sustainable development is a concept that promotes the protection of resources in the future. The issues of sustainable development have been discussed and promoted worldwide in various fields including tourism. The elements of sustainable development have been enforced to be considered in every development stage. Meanwhile, the World Tourism Organization (WTO) has promoted the application of sustainable indicator since the early 1990s as essential instruments for policy-making, planning and management processes at destinations. Despite growing number of revenue to local community and business operators, tourism brings other challenges towards the environmental protection. Each destination has limited resources that can be consumed by tourism activities. The increased numbers of tourists will have negative consequences in its natural resources in which pressure from tourism activities, would lead to damage on physical and ecological features. As a result, various actions have been*

*taken by the respective authorities to solve the problem by identifying various tools to measure the sustainability such as; Impact Assessment, Environmental Auditing (EA), Carrying Capacity (CC), Sustainable Tourism Benchmarking Tool (STBT), Certification and Eco- Labeling, and others. Recognizing the importance of sustainable elements in tourism development, this paper aims to measure the sustainability of tourism development of Kashmir through Carrying Capacity (CC). The carrying capacity assessment and sustainability of tourism is an important component of the study as it will form the basis for resource allocation and future development.*

**Key words:** assessment tools, Carrying Capacity, indicators, sustainable tourism development

## **Introduction**

The relationship between environment and tourism has been the subject of considerable debate for the last three decades (Dowling, 2003) in which the elements of sustainable development was started to use with the highly attention towards environmental awareness in the late 1980s (Hunter, 1995) resulted the increases in, the availability and range of holiday types that inferred a greater level of environmental awareness than is associated with mass tourism (Dowling, 2003, p.210). On the other hand, many studies have highlighted tourism-ecology interactions and, in particular, the negative impact of mass tourism on natural and built environments (Farrell and Runyan in Collins, 1999). Meanwhile, the application of sustainable indicator has been promoted by the World Tourism Organization (WTO) since the early 1990s, as essential instruments for policy-making, planning and management processes at destinations (Hunter, 1995). Since that, the elements of sustainability has been promoted world wide in various fields including tourism. Besides, it has been enforced to be considered in every development stages. As a source of foreign exchange, thus tourism seems as an

economically important (Briguglio, n.d). The growing number of tourist arrival were resulted in the development of tourist infrastructure, accommodation, recreation centre, transportation and so on as to ensure a high level of satisfaction of tourist during their stay in a destination. Moreover, tourism activities also would benefits local community in term of job opportunity and promote better quality of life. Despite growing number of revenue to local community and business operators, it brings other challenges towards the environment protection which could not consider all of the benefits. For example, the increased numbers of tourists will have negative effect in it natural resources in which pressure from tourism activities, lead to damage on physical and ecological feature. On the other hand, limited information disclosure and poor monitoring of actions encourage the perpetuation and extension of environmental problems which create potential for tourism to destroy the available common environmental resources through overuse and poor management practices (Karatzoglu & Spilanis, 2010). As in Kashmir, most of tourism destinations are associated with natural resources and cultural heritage as main attractions. Either it exists or proposed, the potential for both positive and undesirable environmental and socio cultural impacts to occur has a great potential (Dowling, 2003). As noted by Coccossis (2004, p. 5), any type of activity usually has impacts of varying kind on a system. The key question is whether these impacts are significant or not, in order to take remedial action or act early in anticipation of impacts. Significance is a matter of relative assessment and this brings up two kinds of question: 'in relation to what?' and 'how much is enough? The uncontrolled developments have now shows the impact like water and air pollution, landslides, flashflood, abandoned projects, and so on (Badaruddin Mohamed, Ahmad Puad Mat Som, Jamil Jusoh and Kong, 2006). The concept of tourism carrying capacity is one which exemplifies the need to maintain development and activities at a level, both ecologically

and socially sustainable (Li, 1998). Primarily it aims to avoid environmental degradation and social conflicts Cazes-Duvat (2001). This technique also would define the limits on tourism development in a place such as size, intensity, and so on (Coccosis, 2004). Also, carrying capacity can be used as a management process in order to ensure that tourism development is carried out within the context and thresholds of optimum level of overall capacity, thus ensuring the long term sustainability of the tourist development (Saveriades, 2000). Once a carrying capacity is determined, it can be used as a helpful tool to make important decisions, but calculating carrying capacity is more complex than one might imagine (Beauline, n.d).

The hope and survival of the Kashmir economy mostly depends on the Tourism. Every effort is being made by the tourism players to attract more and more tourists to the valley, be it domestic or foreign one. But less attention is paid about the carrying capacity of a particular destination and about the sustainability of tourism. Effective management, judicious use of the natural resources and better marketing strategies can do wonders for the sustainability of the tourism. Therefore, this paper aims to discuss and review on previous studies or practices related with sustainable tourism which comprise on framework, assessment approaches, criteria, indicator and others. Moreover, further discussion on tourism and its sustainability in Kashmir is focused in this paper.

### **Measuring the Sustainability: Methods and Applications**

According to Coccosis and Mexa (2004), acceptable level of component's capacity can be set in terms of: (a) Acceptable level of congestion or density in key areas or spatial units such as parks, museums, city streets, etc. (b) Maximum acceptable loss of natural resources (for example water or land) without significant degradation of ecosystem functions or biodiversity or

loss of species. (c) Acceptable level of air, water and noise pollution on the basis of tolerance or the assimilative capacity of local ecosystems. (d) Intensity of use of transport infrastructure, facilities and services. (e) Use and congestion of utility facilities and services of water supply, electric power, waste management of sewage and solid waste collection, treatment and disposal and telecommunications. (f) Adequate availability of other community facilities and services such as those related to public health and safety, housing and community services, etc (p. 59). However, some critics on carrying capacity include that it is difficult to be implemented as it is impossible to measure, difficult in predicting impacts, it is neither fixed nor static, and can depend on the speed of change (Head Simon et al, 2004). Moreover, it is an extremely fluid concept fraught with uncertainty like climatic features (Collins, 1999). Besides, carrying capacity is more related to the theoretical frame work rather than the offering an adequate solution for development control (Clark et al., 2002). Thus, this review aims to identify other tools of measurement to achieve a sustainable tourism development. According to Mowforth & Munt (2008), there are several tools of measuring the sustainability (see Table 1). Meanwhile, study by Stevens (2002) identified few tools that have been developed over the past 25 years to help the tourism industry to improve its environmental performance which has been categorized into Codes of Conduct; Operational Manuals; Award Programmes and Competitions; Certification Programmes; Indicators and Benchmarking and Lifecycle Assessment. Moreover, there are other methods that have been promoted worldwide. Reviews of them have been summarized in **Table 1**.

**Table 1: A review on method and applications**

Method	Destinations / Country	Description	Source
Tourism Carrying Capacity (TCC)	Hengistbury Head, Britain	This study aims to identify the carrying capacity problems in Hengistbury Head, focusing on two specific criteria; environmental impacts and physical constraints. Also, it analysed and proposes some mechanisms for determining, managing, increasing and controlling the environmental carrying capacity of Hengistbury Head.	Simon et al (2004)
Limit of Acceptable Change (LAC)	Punakaiki area on the West Coast of the South Island, New Zealand	This study documented the stakeholders' issues and concerns about each site; collected visitor experience information; evaluate visitors' sensitivity to potential impacts on-site; and develop a list of potential indicators of change at each site, as stated by stakeholders and visitors.	Johnson et al (2001)
	New Zealand's natural areas: A case study on the Mingha-Deception track	It is a framework for visitor management planning which aims to decide how much visitor-induced change (impact) in a natural area is acceptable which include of public participation in decision-making (based on the views and beliefs of stakeholders).	McKay (2006)
Destination Environmental Scorecard (DES)	Greek Islands	It draws on activity-based management concepts and can help local hotel SMEs measure and compare their performance against certain standards and thus conduct operations in a responsible and measurable way to the benefit of both business financial performance and regional sustainability.	Karatzogl u & Spilanis (2010)
Goal programming synthetic indicator (GPSI)	Andalusian Coastal counties	Based on goals provided by users, it facilitates decision making in practical situation by identifying the main characteristics of the different elements, the weaknesses and strengths.	Blancas et al (2010)

The Weaver Model	General	Identification of the most effective and efficient tools for sustainable tourism development in the target areas	Blancas et al (2011)
Distance-principal (DPC) Indicator	Andalusia	Combination of principal component analysis (PCA) and the distance to a reference point concept	Stevens (2002)
Sustainable tourism benchmarking tool (STBT)	Indonesia, Malaysia, Thailand	A framework based on several dimensions (assets, activity, linkages, leakages, sustainability and infrastructure) which enable to draw a descriptive map of the score for individual It allows on addressing specific tourism related issues in developing countries by analyzing various linkages between specific areas. It aims to detect the sustainability problems in tourism destination and enable policy makers to make informed decisions and improve the prospects for sustainable tourism in their countries.	Cernat and Gourdan (2007)
Integrated Quality Management (IQM)		EU It is a process to assist in defining the implementation of sustainable tourism	Stevens (2002)

## Objectives of the Study

The present paper is based on the following objectives:

- To study the need of sustainable tourism development in Kashmir,
- To measure the sustainability of tourism development in Kashmir,
- To measure the carrying capacity of different tourist destinations in Kashmir.

## **Methodology and Data Sources**

In the present study secondary data has been used. Secondary data has been collected from the tourism Department and Economic survey of Jammu and Kashmir and simple tabulation methods has been used for analysis purpose. This paper measures the sustainability of tourism development in Kashmir by measuring the carrying capacity of different tourist destinations in the Kashmir region, the home region and most beautiful regions among the three regions of the state.

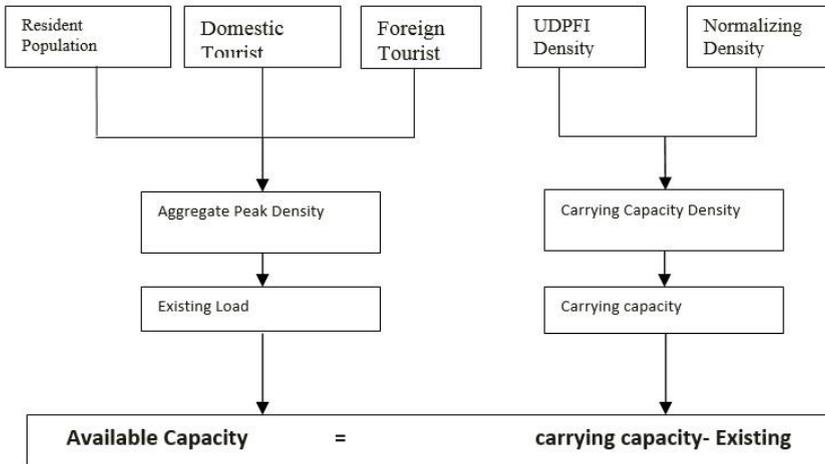
### **Hypothesis**

**HO:** The development of tourism in Kashmir is unsustainable.

### **Carrying Capacity Analysis**

Tourism carrying capacity is defined as ‘the maximum number of people that may visit the tourist destination without causing destruction of the physical, economic and socio cultural environment and an unacceptable decrease in the quality of visitor’s satisfaction.’ (Alvin Chandy, 2009). Assessment of TCC is based on three major indicators: Physical-Ecological, Socio-Demographic and Political- Economic. Physical and Ecological Indicators are based on fixed components (ecological capacity, assimilative capacity) and flexible components (infrastructure systems like water supply, electricity, transportation, etc). Socio-demographic Indicators refer to social and demographic issues and importance to local communities, as they relate to the presence and growth of tourism. Some of these can be expressed in quantitative terms but most require suitable socio-psychological research. Political-economic Indicators refer to the impacts of tourism on local economic structures, activities, etc. including competition to other sectors. The primary focus here is to study the Existing Capacity and Carrying Capacity of different tourist destinations in Kashmir circuit. When we deduct Existing Capacity to Carrying Capacity the Available

Capacity for a particular place is reached (**Available Capacity = Carrying Capacity (CC) - Existing Load (LEXISTING)**). The Available Capacity at different tourist destinations for 2011 has been shown in the following below table. The base year figures of 2010 have been taken into consideration. For calculating the domestic tourist load in 2020 the base year figures of 2010 were thus projected using a CAGR of 12.16%. Thus For calculating the foreign tourist load in 2020 the base year figures of 2010 were thus projected using a CAGR of 10.76%. The sum of Domestic Tourist Load (2020) and Foreign Tourist Load (2020) was arrived at to estimate the Tourist Load in 2020.



**Figure 1: Model for Carrying Capacity Analysis**

## Findings

### Town Wise Carrying Capacity of the Kashmir

Using the above methodology the carrying capacity of Kashmir was analyzed. The results of the analysis are summarized in the **Table 2**.

**Table 2: Town wise Carrying Capacity Analysis of the Kashmir**

<b>Destinations Covered</b>	<b>Existing Load (2010)</b>	<b>Carrying Capacity</b>	<b>Available Carrying Capacity (2011)</b>	<b>Estimated Load (2020)</b>	<b>Available Carrying Capacity (2020)</b>
Srinagar ( Mughal Gardens)	1228909	2297904	1068995	1600622	697282
Gulmarg	8648	15390	6742	22601	-7211
Watlab (Wular Lake)	32782	52260	19478	42246	10014
Sonmarg	6578	17280	10702	14398	2882
Manasbal	21323	50310	28987	29015	21295

- In Gulmarg the existing carrying capacity is almost exhausted and if the existing development continues then in 2020 it crosses the limit of sustainable development. Gulmarg is a destination which has a very fragile environment where development should be handled with extreme caution such that they do not contribute further to the unsustainable development of the place. Hence, only upgradation of the existing infrastructure is advisable.
- Srinagar has excess carrying capacity that can accommodate extra tourist inflow. This is primarily due to the stunted tourist inflow to the city due to poor connectivity, and perceived security issues in the past. With the construction of an alternative highway and the under construction railway line to Jammu (which will connect Srinagar to the rest of India) the connectivity is improving. The security situation has also largely improved in the recent past. Thus, better and vigorous marketing of destinations can help in utilizing this potential carrying capacity that is available.
- Most other destinations like Wular, Manasbal etc have excess carrying capacities left that could be exploited. This is primarily because these destinations are largely unexplored and lack necessary basic tourist infrastructure. These destinations are also taken up as

they have huge tourism potential and are round the year destinations (which is an asset considering that sharp seasonal variations in tourist flows in Kashmir have also contributed to difficulty in the maintenance of the tourism assets and economy in the off peak seasons) .

### **Destination Wise Carrying Capacity of the Kashmir**

The Destination wise carrying capacities were also evaluated. These gave a clear picture of the capacities available at each destination. The methodology used was similar to the carrying capacities of towns except that the variations in the sustainable tourist carrying capacities of the various destinations were calculated using appropriate best practices. In calculating the current tourist loads at destinations local tourists, i.e. visitors at destinations from the local resident population are also considered.

**Table 3: Destination wise Capacity Analysis of Kashmir Circuit**

Town	Destination	Existing Load (2010)	Carrying Capacity	Available Daily Capacity (persons) 2010	Estimated Load (2020)	Available Daily Capacity of Fort (persons) 2020	Measure Suggested	Enhanced Capacity
Srinagar	Chashma Shahi, Botanical Garden	1325	6563	38050	2513	18695		18695
Srinagar	Nishat Garden	16868	6143	-488	20684	-4304	Restrict the dwell time to 1 hr per visitor	3886
Srinagar	Shalimar Garden	12682	4784	76	15577	-2819	Restrict the dwell time to 1 hr per visitor	3560
Srinagar	Dal lake	23667	16659	22980	46248	-6963	Develop the lakefront on the western edge	1519

Srinagar	Dachigham National Park	131	342	554	248	437		437
Srinagar	Hazratbal shrine	31204	2925	37046	48456	19794		19794
Gulmarg Tourist resort	Gulmarg Tourist resort	9093	11250	2157	23190	-11940	Develop Durung and Tangmarg	18060
Watlab	Wular Lake	3646	60275	2157	7191	93268		93268
Sonmarg	Sonmarg	5170	67500	62330	13002	54498		54498
Manasbal	Manasbal lake	4376	16439	23022	8629	18769		18769
Tangmarg	Tangmarg	2553	15000	117447	6810	113190	Develop Durung and Tangmarg	53190

Interpretations of the carrying capacity analysis as presented in **Table 3** for the various tourist destinations in the Kashmir Circuit are as follows:

- The carrying capacity of Nishat Garden in peak hours of the peak season got exhausted in 2010 and Shalimar Garden falls short by 2819 in 2020. The reason behind this is that they are the most famous destinations worldwide and hence attract a good flow of domestic, foreign and local tourists. The carrying capacity of these Gardens can be enhanced to accommodate the tourist flow by restricting the dwell time of each visitor to 1 hour. Thus, by doing this an additional carrying capacity of 3886 persons and 3560 persons is made available at Nishat Garden and Shalimar Garden respectively.
- The carrying capacity of Dal Lake would be exhausted in 2020. The reason behind this is that Dal Lake is probably the most sold tourist destination of Kashmir and hence attract a good flow of domestic, foreign and local tourists. The carrying capacity of Dal Lake can be enhanced to accommodate the tourist flow by developing the Lakefront on the western edge also, similar to the development on the eastern edge. This will enhance not only the lakefront and preserve it from further

encroachments but also enhance the carrying capacity. Thus, an additional carrying capacity of 1519 persons will be available in 2020.

- The Tourist Resort of Gulmarg falls short of its carrying capacity in 2020 by 11,940 tourists. The reason behind this is that Gulmarg (sometimes referred to as the “Switzerland of India”) and is a hot spot of tourism especially peaking during the winter season as a skiing resort. The carrying capacity of Gulmarg resort can be enhanced by developing Tangmarg at the base (5km) and specially Drang (in Tangmarg) as an alternative destination. Night stay and allied tourist infrastructure like hotels, guesthouses, shops, restaurants etc should be developed at Tangmarg. Thus, the unsustainable exploitation of this highly eco-sensitive site can be averted and it can have additional capacity of 18060 day visitors in 2020.

## **Conclusions**

Tourism as an economic activity may cause damages to the protected areas, especially if they are not appropriately managed. As the flow for tourism grows rapidly the pressure on the best known tourist areas also grow. In several protected areas there are so many visitors to specific spots or in certain moments that nature and the quality of the visitor’s experience has to suffer. Tourist facilities often conflict with preservation goals and damage natural landscapes. However, if tourism is planned and managed in order to be sustainable, it can be a positive force, bringing benefits both to protected areas and to local communities. Given the significant role of tourism in the economy of Kashmir and the potential benefits from it, there is a need to ensure that the tourism industry remains both environmentally and economically sustainable (Siti et al). Therefore, it is essential to understand the whole framework of

sustainable tourism development. Moreover, careful planning and assessment are important parts of sustainable tourism development (United Nations, 2001). It is obvious that some form of assessment is essential to protect the environmental assets on which tourism is planned (Inskeep, 1991). On the other hand, the assessment is suggested to be conducted both at planning stage and after development for monitoring.

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