Carrying Capacity based Development Plan of Sabarimala - A Preliminary Approach

CK Sasidharan
Center for Earth Science Studies, Thiruvananthapuram, Kerala, India

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Overview

1. Introduction

Since the objective of the development plan for Sabarimala is primarily to provide basic amenities to the pilgrims, any proposal for the development of Sabarimala, either partially or fully, should be worked out holistically based on a carrying capacity - based development planning. In this context, an inventory has to be made on land, water, biological and socio-economic environment of the area, first, which will form the basis for drawing up an effective master plan for Sabarimala.

Sabarimala temple, dedicated to the deity, Lord Ayyappa, is situated in a deep, dense forest on the virgin hill of Sabari, in the Ranni-Perunad village of Pathanamthitta district of Kerala (**Figure-1**). The hill is surrounded by a row of high peaks of Western Ghats. It has outgrown all the accepted definitions of a pilgrim centre. As the Shrine is situated in dense forests, any proposal for providing better amenities to the pilgrims must take care of the consequent environmental degradation of the area. Although pilgrims from all over the country visit Sabarimala, every year, access to Sabarimala is limited due to its situation inside the dense forest. To reach the temple, one has to climb a steep hill, starting from Pamba by strenuous walking for a distance of nearly 6 km. Another alternative is climbing down from a place called "Uppupara", which is actually more tiresome and time consuming. This streneous journey, coupled with the compulsory long wait required for "Darsan", compels many pilgrims to stay overnight at the temple premises. At Sannidhanam, the vast concourse of pilgrims gets stranded without proper accommodation and other basic amenities. Consequently, the whole locality turns foul and filthy during the season. An area of about 65 sq.km of forest around Sabarimala temple is the main impact area due to pilgrimage (Mahabala Rao, 1985).

Though enumeration of pilgrims has not been undertaken, scientifically, according to Travancore Devaswam Board, more than 5 crores of pilgrims visit Sabarimala for darsanam, every year. During peak season, i.e., during Mandalavilakku and Makaravilaku, the daily inflow of pilgrims even goes beyond five lakhs. According to a report released by the Kerala Police Department, the arrival of pilgrims during the initial period (from November15), would be around 40,000 - 50,000 per day, which gradually rises to over one lakh a day. It reaches 1.5 to 2 lakhs on peak days during the Mandala pooja season. During the Makaravilakku, the figure rises from about 1 lakh to over 3.5 lakhs.

1.1 The Holy 18 Steps and the Main Shrine: One of the urgent tasks to be addressed in relation to Sabarimala is the compilation of a scientifically reliable spatial database. It is also to be pointed out that maximum one lakh pilgrims alone can be allowed to climb the 18 steps and reach the sanctum sanctorium. If the arrivals are greater

MAP OF SABARIMALA REGION

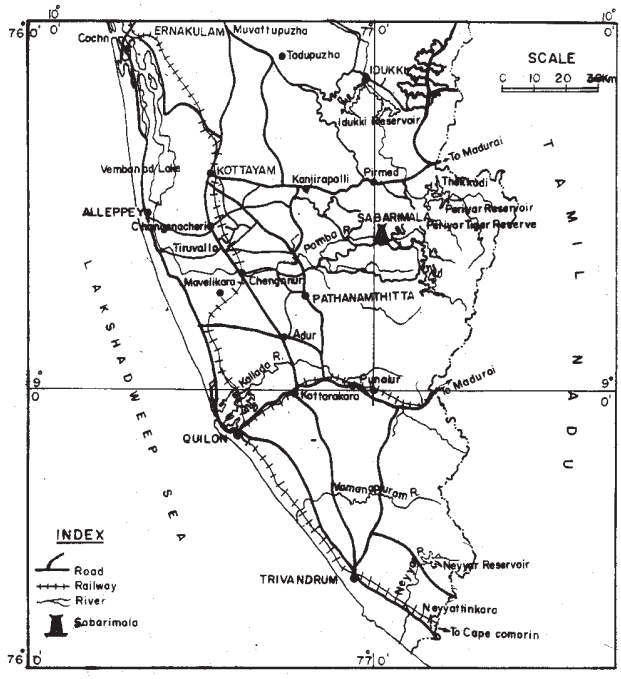

Figure – 1

than this figure, they will congregate at the entrance, and consequently long queues for several km are seen during peak season. The number of pilgrims queuing at the entrance of the temple for passing through the 18 holly steps and the main shrine for darshan is far beyond its capacity. The pilgrims who arrive before one or two days of Makara Sankranthi do not generally return immediately, and most of them stay back for viewing the Makara Jyothi. This causes uncontrollable overcrowding of pilgrims at Sannidhanam. The absence of adequate, basic needs such as drinking water, toilet facilities, resting place etc. put pilgrims in great hardships. This has virtually turned the phenomenon, that is Sabarimala, into a socio-ecological problem.

The issues that are to be addressed in this context are:

a) How best the basic needs of the ever increasing population of pilgrims are to be addressed.
b) While doing so, what are the environmental issues and imperatives that are to be looked into for their mitigation/management; and
c) To select the best alternative solution out of many that is most suitable and viable in the given circumstances.

The three cardinal points mentioned above will have to be addressed in a holistic manner and not in a piece meal way. In other words, any master plan(s) that is proposed to improve the basic needs and amenities of pilgrims should take note of the carrying capacity of the region in terms of as to how many pilgrims can be entertained at a given point of time in Sabarimala within the resource potential-cum restraints of land, water, air, biological and socio-economic environment. If land is not available, what alternative solution is there; so also about water and other resources.

Assuming, for example, that both land and water are available and that the existing environmental protection act does not permit construction of any infrastructural facilities, then one has to examine as to what are the alternatives available to address the issue for a possible solution. From another angle, let us assume that Sabarimala can accommodate any number of pilgrims at a given time, one of the valid questions that may arise is that how much human waste the environment of Sabarimala can assimilate without reducing the quality of environment or as to how best one can manage the waste generated through appropriate measures. Therefore, the dimensions of pilgrimage to Sabarimala today are many - faceted which need careful scrutiny and analysis before a master plan is worked out. One of the primary requisites, therefore, is to collect all the existing baseline information on supportive capacity (resources) and assimilative capacity (pollution level) of the "region" (the extent of the region would vary from one alternative to another). This is what is being attempted to in this paper.

2. Status on Baseline Information

2.1 Use of land in Sabarimala - Supportive Capacity (SC): This is basically an interpretative analysis of the existing information on Sabarimala shrine of Kerala and its environs vis-à-vis its carrying capacity with the object of going, in detail, a detailed programme on the same subject. According to Devaswam Board Authorities, scarcity of land is one of the major constraints in providing the basic facilities to the pilgrims. Land is required to widen the existing roads, construct new roads, provide additional vehicle parking space, pilgrim shelters, toilets etc. The open land available with the Devasthanam at Sabarimala is only 20.57 hectares and it has been fully put to effective use (Table - 1). The details of built up area at Pamba and Sannidhanam are given in Table 1a.

At Sannidhanam, 79.72 per cent of the area is unused and the temple structures (6.32 %) and pilgrim shelter (5.87 %) constitute the major built up Categories.

All developments at Sannidhanam have come up due to the glory and sanctity of the Sri Kovil. But, now the Srikovil appears submerged in the surrounding buildings. If adequate land is made available to the Devasom Board, many problems faced by the pilgrims could be solved. The report of the Legislative Committee on Environment on Sabarimala Master Plan stresses "necessary replanning of some existing buildings has to be done with a view to make the best use of the available space so that more and more forest areas are not destroyed".

Table - 1 : Total area (hectares) in Sabarimala and Pamba covering the shrine complex

Sannidhanam	5.46	(in possession)
	20.24	on lease
	5.13	Built-up area
	20.57	Open area
Pamba	4.05	Ganapathy Temple area-on lease
	4.05	Parking area

Source: Travancore Devaswam Board (Sabarimala Development Project) Records

Table – 1a Built up area at Pamba

Category	Area (in per cent)
Pilgrims' latrine	1.30
Pilgrims' shelter	0.90
Temple structure	2.88
Lodging	1.53
Health care	0.34
Hotel	1.34
Police	1.71
Service providers	1.90
Kerala Water Authority	0.33
Parking facilities	33.91
Others	0.63
Free land	53.23
Total	**100**

Table – 1b Built up area at Sannidhanam

Category	Area (per cent)
Pilgrims' latrine	0.43
Pilgrims' shelter	5.87
Temple structure	6.32
Lodging	2.37
Health care	0.66
Hotel	0.89
Police	0.88
Service providers	1.09
Kerala Water Authority	0.64
Others	1.13
Free land	79.72
Total	**100**

Being part of the Periyar Tiger Reserve, a home to a wide variety of flora and fauna, the environs of Sabarimala has been subjected to severe degradation over the years due to uncontrolled influx of pilgrims and unplanned expansion of infrastructural facilities or lack of it. The forest in this area exhibits variations in floristic composition and structure. Of these the evergreen and semi-evergreen are often seen mixed together. (This report categorised them as a single type-'evergreen'). The evergreen forests are characterized by a bewildering multiplicity of life forms and preponderance of greenness. This forest is lofty, dense and characterized by large number of species of trees which occur together.

2.2 Vegetation mapping: The vegetation was classified by KFRI (2000) into three density levels, less than 40 percent canopy density as low density class, between 40 per cent to 60 per cent as medium density class and more than 60 per cent canopy density as high density class.

2.3 Land - Assimilative Capacity (AC): Land is a scarce resource and is in great demand. Solid wastes are causing serious environmental problems at Sabarimala. Quantification of solid waste, its segregation into bio-degradable and non –biodegradable and its processing and utilization are important areas needing special attention.

2.4 Sanitation: Pamba, down hill at the *Sannidhanam* (sanctum sanctorum) also known as Dakshin Ganga, where millions of Ayyappa devotees take holy dip every year, is the lifeline of the Central Travancore and Kuttanad. Lack of proper planning and inadequate sewage disposal at Pamba river and *Sannidhananm* have been posing serious pollution problem to the holy river, affecting scores of people residing along the river basin and the Kuttanad region, down stream.

2.5 Water Environment - Supportive Capacity (SC): The present capacity of the Water Supply Scheme is 8.10 million litres per day. It is aimed to supply the peak demand of 4.50 Mld at Pamba and 3.60 Mld at Sannidhanam. The water supply arrangements at Pamba, Neelimala, Appachimedu and Marakkuttom are maintained by the Kerala Water Authority. The water supply system at Sannidhanam is maintained by the Travancore Devaswam Board (TDB) by drawing additional water from Kunnar, which is about 7 km away from Sannidhanam. About 1 Mld of water is supplied by TDB. Devaswam Board record shows 8.5 million litres is the storage capacity of Sannidhanam and Pamba. In addition, a 2 million litres storage capacity is also available in the overhead tank of various buildings at Sannidhanam.

2.6 Water - Assimilative Capacity (AC): Water supplied is disinfected using gaseous chlorine. This arrangement is there at Pamba, Neelimala bottom and Saramkuthy to ensure 100% bacteriologically free water for drinking. For monitoring the quality of water, day-to-day testing of water samples is required. The Central Pollution Control Board has laid down standards for quality of river water (depending upon the use of water). The level of pollution in Pamba reaches its maximum during the time of Makaravilakku festival. The State Pollution Control Board (PCB) of Kerala had recorded the coliform count in the river water at Pamba at around 3 lakhs per 100 ml during peak days of the previous pilgrim season against the permissible limit of 500 per 100 ml. This emphasizes the need for immediate management program.

2.7 Socio-economic scenario – Demography: Development activities are accompanied by a number of positive and negative impacts on social environment. The enormity of the pilgrims visiting Sabarimala has risen to such a stage that they have to be in the long queue for more than ten to twelve hours, exposed to the hot sun and, at times, in heavy rains. Casualties on account of stampedes are also taking place. The maximum loss of lives to pilgrims happened during 1992-93 due to stampedes and lack of medical facilities. There was also the outbreak of infectious diseases in the area, especially, chicken pox and jaundice. With all the efforts by the Devaswam Board, the cleanliness of the environment could not be maintained due to over crowding of pilgrims. Every year, the number of pilgrims are increasing by lakhs and, therefore, the crisis faced is also increasing. (Table 2).

Table-2 : Number of pilgrims visited Sabarimala during 1992-93 to 1996-97

Year	Nov. to Jan. (No.of pilgrims in lakhs)	Other months
1992-93	230	1.25
1993-94	275	1.50
1994-95	330	1.80
1995-96	420	2.10
1996-97	500	2.50

Source: Travancore Devaswam Board Records (Sabarimala Development Project)

The assessment and opinion differ so widely on this crucial figure. Some of which are intentional, while others

are due to ignorance and hear say. There have been talks of putting the number of pilgrims visiting the Shrine in the range of 5 to 6 crores per year. While the agencies like TDB; Akil Bharatiya Ayyappa Seva Sangham; Director, Health Services, Kerala; Grama Panchayat President of Ranni Perunadu Panchayats are amongst the categories who have put the figure of pilgrims visiting Sabarimala every year at a whooping high of 5 to 6 crores, while there are others according to whose opinion/assessment, the figure is in the range of 50 lakhs to 2 crores **(Table -3).**

The affairs of the temple and the facilities were looked after by the Travancore Devaswam Board with the help of certain organisations. The Environment Committee of the State Legislative Assembly also looked into the matter and made certain suggestions for improving the quality of the environment. The PWD, Health Services, Police, Forest, Telecommunications Department, Fire force, Excise Department, Transport, Motor Vehicle Department etc., helped in looking after the welfare of pilgrims during the peak season. The State Police Department deploys annually about 3000 policemen at Pamba and Sannidhanam to manage the law and order situation which has been aggravating year after year.

Table – 3 : No. of pilgrims who visited sabarimala (1997) – Source – wice

Sl.No	Source	No of Pilgrims in lakhs		
		On season	Off season	Total
1	District Collector	50.00	5.00	55.00
2	Animal Husbandry, Pathanamthitta	5.00	0.10	5.10
3	Sabarimala Devaswam Authority	500.00	2.50	502.50
4	Pamba Pariraksha Samithy	200.00	2.30	202.30
5	Vasthu Vidhya Gurukulam	55.00	5.00	60.00
6	Superintendent of Police, Kottayam	25.00	0.25	25.25
7	Akhila Bharathiya Ayyappa Seva Sangam	500.00	4.00	504.00
8	Kerala Water Authority, Pathanamthitta	122.00	1.00	123.00
9	KSRTC Pathanamthitta	296.00	4.00	300.00
10	Superintendent of Police, Pathanamthitta	125.00	12.00	137.00
11	Dist .Soil Conservation Office, Pathanamthitta	500.00	--	500.00
12	District Supply Office, Pathanamthitta	200.00	5.00	205.00
13	Director of Health Services, Trivandrum	600.00	5.00	605.00
14	Grama Panchayat, Vadasserikara	200.00	10.00	210.00
15	Grama Panchayat, Ranni-Perunadu	500.00	0,05	500.05
16	Revenue Divisional Officer, Thiruvalla	125.00	12.00	137.00
17	Divisional Forest Officer, Konni	40.45	15.20	55.65
18	Divisional Forest Officer, Ranni	125.00	25.00	150.00
19	Revenue Divisional Officer, Adoor	200.00	25.00	200.25

2.8 Health Environment: Environment is everybody's concern. In Sabarimala, it should be the concern of all humanity. The basic issues to be addressed urgently are as to how best the bare needs of the ever-increasing influx of pilgrims can be met, on the one hand, and the environmental issues to be addressed to select the best alternative solutions, on the other. Activities of Sabarimala Sanitation Society cover the question of environmental sanitation, health, hygiene and tidiness in and around Sabarimala and Pamba during the pilgrimage season. Provision of parking of vehicles very close to the river is one of the major causes leading to open defecation at the bank, which causes pollution of the river.

2.9 Business as usual scenario: Solid wastes are causing serious environmental problems at Sabarimala. As in the case of sewage, two solid waste collection and disposal arrangements are to be provided, one each at Sannidhanam and Triveni. To improve the "Thriveni-Sangamam' and the area surrounding the confluence, protective works for a length of 500 metre and filling up of an area of about 1.5 ha is required. There exists about 500 metre length of masonry bathing ghat at the Pamba Snanam area.

2.10 Future course of action-approach to the development of Sannidhanam: The Environment (Protection) Act 1986, imposes restrictions on the conversion of any forest area for any non-forestry purpose, in the country. The area available with Travancore Devaswom Board at Sabarimala is fully developed and converted it into concrete structures. There is no scope for any further development for providing facilities for the ever increasing flow of pilgrims. The immediate vicinity of the Temple is a reserve forest and the chances of getting more land for providing shelters to the pilgrims here are remote. Hence, alternate arrangements have to be provided for the pilgrims.

3. "Sabarimala Development Authority (SDA)"

The proposals made above are to be implemented through Travancore Devaswom Board and various other departments of the State and Central Government. In order to co-ordinate and control the entire activities, it is better to have an authority. Hence, it is suggested that the

Govt. may form an authority called “Sabarimala Development Authority” (SDA) and entrust this authority to work out a master plan with the points raised amongst others for the sustainable development of Sabarimala and its environs.

3.1 Carrying Capacity-based Development Plan for Sabarimala: The absence of a master plan all these years and the havoc that has been caused on account of this has to be set right in order to enhance the sanctity of the divine abode, on the one hand, and the improvement of the environment, on the other. However, these need professional bodies and expertise on the subject. It is doubtful whether the Sabarimala master plan committee constituted by the Kerala Legislative Assembly would be able to deliver the goods in view of lack of expertise needed for the purpose. Therefore, an alternative body to prepare a master plan is to be constituted/ reconstituted.

4. Results and Discussion

The present study has been done basically based on secondary data available with various agencies. Details of actual number of pilgrims arriving the temple, the number of vehicles coming, etc. are not scientifically collected by any agency. There is a need for the preparation of a scientific, carrying capacity based management plan for Pamba - Sabarimala areas.

Integrated ecofriendly development programme with Sabarimala’s tradition and architectural singularity is what is needed now to arrive at a permanent solution to the malaise that has set in. A coherent and well thought out approach by a group of people with expertise in environmental sciences, ecologists, engineering architects, technocrats, etc is needed to draw up a master plan. For a lasting solution only such a regional master plan alone can solve the problems, in which Sabarimala may be the central figure.

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