Establishing ecotourism in Mahabaleshwar and Panchgani, India

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Abstract

The hill stations of Mahabaleshwar and Panchgani in the Western Ghats, India, have been a popular location since British soldiers visited to escape the heat of the lowland plains. In recent years, the growth of India's consumer class, combined with increasing access to private and public transport, has led to damaging new tourist developments. Problems include the clearance of natural vegetation for hotels and facilities, the cutting of trees for fuel wood, increased pressure on water and electricity resources, pollution from vehicles, overcrowding and litter. These are serious concerns, due to the fragility and ecological importance of the forest and scrubland in the region. The character of Mahabaleshwar in particular has also changed, from a tranquil place for relaxing and appreciating nature to a busy commercialised resort.

Local authorities and environmental groups have made efforts to control these problems, but these have so far proved ineffective. Few people want to limit the growth of tourism in the region; most local residents, business owners and government planners favour the continued growth of mass tourism. This raises important questions about who should dictate the future pattern of tourism and whether environmental preservation is preferable to local economic growth, even when there are few alternative prospects.

This study examines why previous measures to make tourism more environmentally sustainable have been unsuccessful. A management plan is suggested which divides the region into zones of different tourism activity, with an emphasis on establishing ecotourism. This proposal is a new approach to solving the problems caused by tourism and, in theory, satisfies the conflicting aims of environmental preservation and economic development.
Keywords: carrying capacity, economic development, ecotourism, protected area management, zoning.

1 Introduction

The tourism industry has grown significantly in recent years. It is now one of the world's largest industries, contributing six percent of global Gross Domestic Product (PHDCCI [1]). This growth is set to continue, with global tourist numbers predicted to double between 1990 and 2010 to 1.018 million (Lindberg *et al* [2]). An important area of growth is ecotourism. There has been considerable debate regarding different forms of 'environmental tourism'. The terms and characteristics associated with these are widely discussed, for example by Mowforth and Munt [3]. One definition of ecotourism is 'responsible travel to natural areas that conserves the environment and improves the well-being of local people' (The International Ecotourism Society [4]). The World Tourism Organisation estimates that ecotourism is growing at an annual rate of five percent and almost every country now practices some form of ecotourism. India in particular has considerable potential for ecotourism, with 574 National Parks and wildlife sanctuaries, all open to the public. Competition between humans and the environment is also greater in India than any other region of Asia (Lew [5]).

The relationship between tourism and the environment is complex. Tourism has become a focus of criticism, because of its negative environmental impacts, and a focus of promotion, as a means of achieving sustainable development (Mowforth and Munt [6]). While it can be difficult to isolate tourism impacts from other forms of development, tourism does attract unfair criticism, as the impacts are more tangible than other forms of development (Buhalis and Flecher [7]). Previous research on ecotourism has often focused on the impacts and benefits of introducing tourism to previously undeveloped locations. However, to increase environmental protection further, ecotourism will need to be developed in areas where tourism already exists, rather than untouched 'wilderness' areas. This is the situation in Mahabaleshwar and Panchgani, where ecotourism is being considered as a mechanism for controlling the growth of tourism.

2 Study region

The Western Ghats mountain range is ecologically very important. Isolation from other rainforest areas in Asia means that many species in the Western Ghats are unique (Gadgil [8]). The diversity of plant and animal life has led to the Western Ghats, along with Sri Lanka, being declared one of 18 'biodiversity hotspots' in the world. The key criteria for these hotspots are the degree of endemism and the degree of threat. All hotspots have lost over 70 percent of their original vegetation cover. Identification of these hotspots enables prioritisation of conservation interests (Agrawal [9]). Mahabaleshwar and Panchgani are located within this region.

The variations in altitude, humidity and edaphic factors within the study region have produced a wide range of tropical, sub-tropical and temperate plant and animal species, many of which are endemic. Many plant species have adapted to withstand the strong winds and heavy rains of the monsoon and the near arid conditions of winter and mid-summer, making them unique sub-

species. The region is also famous for several rare species of orchids. This vegetation is being cleared for agriculture and tourism purposes.

The loss of forest cover has affected the local fauna. Many animals once abundant in the region are now extinct and others are seriously endangered. The Malabar giant squirrel, the state animal of Maharashtra, is rarely seen. The last Black Panther sighted in Maharashtra was seen near Mahabaleshwar and the sloth bear has disappeared completely. These animals have declined due to habitat loss, a decline in prey for carnivores, disturbance to wildlife corridors in the region and the pollution of rivers and streams.

In recognition of the increasing pressures from tourism and agriculture, Mahabaleshwar, Panchgani and the surrounding forests were declared an Eco-Sensitive Zone (known as the MPEZ) under the Environment Protection Act in 2001 - the first area to be given this status in India.

3   Problems caused by tourism

Tourist numbers have risen steadily since the 1960s (Figure 1). This is partly due to increasing ownership of private vehicles, an increase in the number of private buses and improved road facilities (Dikshit [10]). This growth has had several impacts on the local environment.
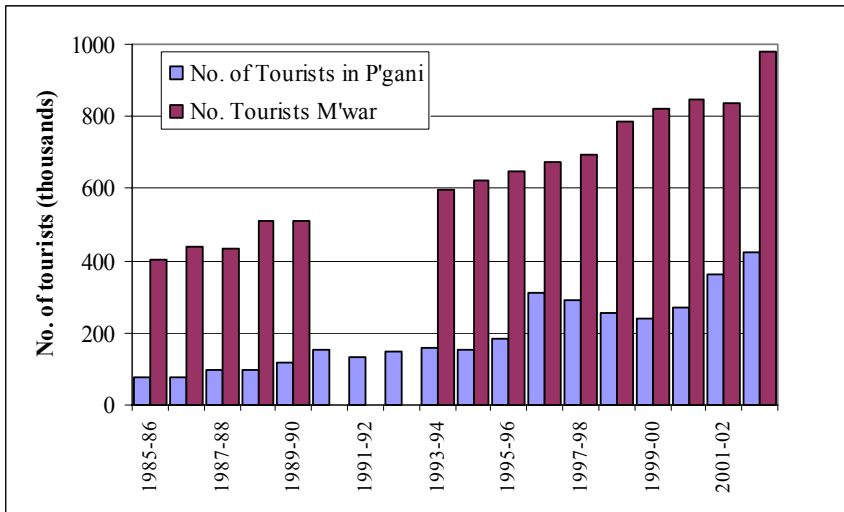

Figure 1:   The growth of tourism in Mahabaleshwar and Panchgani. Source: Mahabaleshwar Tourist Office. (Data for Mahabaleshwar 1991-3 unavailable.)

3.1 New developments

The towns of Mahabaleshwar and Panchgani have both expanded to cater for tourism, encroaching into the natural vegetation. Large areas of forest have been

cleared for new hotels and guesthouses. New buildings are now prohibited, but modifications and expansions still occur. It is difficult to enforce legal restrictions and corruption is widespread. Previous developments were not always designed in keeping with the character of the region. Many are several storeys high, emerging above the forest canopy. Others have used inappropriate materials. Once unsuitable buildings are established, it is difficult to change their appearance.

3.2 Litter and pollution

Traffic causes congestion, noise pollution and atmospheric pollution from exhaust fumes and the volume of traffic, both private and public, has increased steadily. In the early 1990s, this growth was estimated to be an annual increase of 15 to 20 percent each year; it is now even greater (Dikshit [11] Bharucha [12]). The villages around Mahabaleshwar have no solid or liquid waste management system, meaning sewage, litter and household waste pollute the forests and water bodies in the area (Paranjpye [13]).

Increasing tourist numbers exert considerable pressure on many resources and the local infrastructure. The increasing demand for electricity and fuel also causes problems, with power cuts common during the busy summer month. There are often water shortages during the summer months, despite Mahabaleshwar receiving the second highest level of rainfall in India. Besides the increasing numbers of people visiting the study area, the behaviour of many visitors causes problems. There is a growing litter problem, particularly plastic bags and bottles dropped at popular tourist spots.

3.3 The impacts of local people

The growth in tourism has coincided with a growth in the population of Mahabaleshwar, Panchgani and the surrounding villages. This is partly attributable to natural population growth, but also due to migration into the region because of the employment opportunities tourism creates. This causes further problem to the rise in tourist numbers.

3.3.1 Collection of forest products
Although commercial timber cutting is banned, wood is illegally cut for fuel, timber and construction materials by villagers. All the fuel used by local people is wood from the forest. There are fines for cutting wood (50 to 100 rupees per tree), but very few people are caught. Local people also collect non-timber forest products such as orchids, resins and oils for personal use and sale to tourists. Tourism has also caused an increase in poaching and smuggling of animal skins.

3.3.2 Agriculture
Rab cultivation is the traditional form of subsistence agriculture in the region. Local farmers burn tree branches and leaves to return nutrients to the soil. A new area is cleared when the land loses productivity. The area under cultivation continually shifts, until returning to the original plot. However, yields during the

second cycle are invariably lower as the fertility of the soil has not had a chance to return to its original levels. Plots are discarded once they become infertile and the soil is easily eroded (Janah [14]). This unsustainable process means that forest regeneration is virtually impossible, either by natural processes or through plantation programmes. Land is also increasingly cleared for commercial agriculture to feed the growing number of tourists in the region.

Soil degradation has had further negative impacts in the region. During the monsoon, large quantities of topsoil from the slopes of the plateau are deposited in the nearby Koyna reservoir. The rate of siltation is estimated to be 9.63 hectare-metres per 100 km^2 each year. This could affect the economic life of the Koyna dam which supplies hydropower to Mumbai and other nearby towns and cities. It also reduces the storage capacity of the reservoir (Paranjpye [15]).

4 Discussion

The following discussion is based on data collected by the author through questionnaires, interviews and group discussions with the following groups: residents of Mahabaleshwar, Panchgani and surrounding villages; business owners in Mahabaleshwar and Panchgani; tourists visiting the region; members of local environmental groups; members of the Regional Land Use Committee, the Regional Environment Committee and the Regional Planning Board; officers at Mahabaleshwar municipal office and Panchgani municipal office.

4.1 Benefits of tourism

While causing several environmental problems, tourism brings many benefits to local people. This is a key element of ecotourism, according to several definitions. Employment in tourism is the major benefit for local people. Agriculture remains the most common form of employment but tourism provides a more reliable source of income and pays considerably higher wages. A shop or hotel worker can earn 1000 rupees a month, plus food; skilled labourers can earn up to 150 rupees per day. Wages for agricultural workers vary considerably, but are generally much lower than this. Tourism, in its current form, dominates the local economy and provides a good standard of living for many people in the region.

Local people identified improved road access and electricity and water supply systems as other benefits. New schools built in villages and secondary schools in Mahabaleshwar mean that local children can be educated to a higher level. The houses in villages have been improved with better building materials and the bank in Mahabaleshwar enables people to save money. Whilst these changes may have happened anyway, local people felt that tourism revenues helped to achieve them more quickly. Many people also identified interaction with tourists as a positive aspect of tourism.

4.2 Failure of previous ecotourism measures

Previous ecotourism activities have included putting up signs to prevent people from dropping litter and tree planting schemes to regenerate cleared forest areas.

However, these projects have all been unsuccessful. They have been small-scale and under promoted, with an emphasis on individual responsibility rather than collective regional schemes. Several environmental organisations have consequently demanded improved measures to reduce the impacts of tourism on the environment.

The introduction of a carrying capacity is one method for identifying a sustainable level of tourism. This has been suggested by some environmental groups with an interest in the area. Whilst several criteria exist for establishing carrying capacities, there are problems in achieving this. A carrying capacity for vehicles would require more detailed analysis than the total number, including factors such as type of vehicle, how polluting it is (such as exhaust fumes and oil leaks) and how much the vehicle is driven around the region. These impacts cannot always be easily identified or measured.

There is no universally accepted method for calculating carrying capacities for tourist numbers and there is often disagreement regarding which factors to consider and their relative importance. With disagreement over how a figure is determined, local people and businesses losing revenue from limited visitor numbers are likely to contest any legislation introduced. The issue of tourist numbers is also more complex than simply the total number of people entering the region. The areas where vehicles and tourists go within the region are important, as some areas are more ecologically sensitive than others. Visitor activities have become concentrated in a few popular tourist spots. High concentrations have a greater impact than if visitors were dispersed more evenly throughout the region. Furthermore, carrying capacities are not constant phenomena. During animal breeding seasons and periods of plant growth, the sustainable number of visitors is lower than at other times (Lindberg *et al* [16]).

4.3 Zoning plan

The problems identified suggest that restricting tourist numbers is not a realistic option. Any attempt to do so would meet with resistance from people dependent on tourism for their livelihoods, as well as from tourists. There is a strong possibility that a reduction in tourism revenue would force local people to seek alternative sources of income, such as the collection of fuel wood or subsistence farming, which are even more damaging to the environment. A restriction would be very difficult to enforce. Given that the impacts of tourism vary throughout the region, the most appropriate measures would be to:

- encourage greater spatial dispersal of tourists through the region, with restrictions on numbers in the most fragile areas
- encourage greater temporal dispersal of tourists through the year
- educate tourists, business owners and local people regarding the importance of the forests, to change behaviour patterns in all groups
- enforce measures regarding land use, buildings and resource consumption
- begin restoration work to alleviate the existing problems in the region.

The establishment of zoning systems is becoming a widespread management tool for many protected areas in India. Zoning is a compromise between the economic benefits of large-scale tourism and the need for effective environmental protection. I propose that the MPEZ is divided into four zones: ecotourism, nature tourism, commercial tourism and residential.

4.3.1 Ecotourism zone
The ecotourism zone would include the most ecologically valuable areas of forest around Mahabaleshwar and other important ecological sites. It should be closed to the general public and numbers limited to small groups, as happens in other protected areas in India. Visits will take the form of guided nature walks, with an emphasis on nature interpretation and identification. Eighty-one percent of tourists questioned said they would be interested in such activities. The impacts of visitors must be carefully monitored and group sizes adjusted accordingly. The roads in this zone would close to all traffic except for the major access roads to and from the towns.

4.3.2 Nature tourism zone
The nature tourism zone would include the major tourist attractions not covered by the ecotourism zone. These are in less fragile ecosystems and need fewer restrictions. A limited number of tickets would be made available for each point, to encourage a more even distribution of visitors. There would be a ban on private transport but an improved public transport system would be introduced: environmentally friendly buses can transport visitors around the major points in Mahabaleshwar. The hill station of Matheran provides an example of a tourist destination that successfully uses just public transport. There is a complete ban on motor vehicles and scooters and most visitors arrive by train. Alternative forms of transport, such as horses and hand-pulled rickshaws, are a major tourist attraction.

4.3.3 Commercial tourism zone
The commercial tourism zone would incorporate the town centres of Mahabaleshwar and Panchgani. These are currently very crowded and require reorganisation. The town centre of Mahabaleshwar will become a traffic free zone. It would be desirable to encourage more traditional crafts and products. Mahabaleshwar has a tradition of leather goods manufacturing, particularly shoes, and the making of wooden walking canes. These activities have almost vanished, overshadowed by mass tourism.

4.3.4 Residential zone
The residential zone would incorporate the residential areas in the two towns, hotels and guesthouses, as well as the villages between the two towns. Traffic should be permitted in this zone for access. Building restrictions need stricter enforcement to prevent the residential sector expanding further into the forests. It is also important to disperse where people can stay within the region to reduce congestion in the town centres. One method is introducing 'home stays' whereby

tourists stay with local families. This would also provide another source of income, which will go directly for local people.

Establishing these zones within the MPEZ will require long-term planning and management. It is important that the changes occur as a gradual but definite process and that consultation with all stakeholders takes place before any changes are made. When considering the order in which to implement these changes, the initial emphasis must be on educating tourists and changing their behaviour patterns. Education for local people and business owners is important for obtaining support for these changes, but these groups are more likely to adapt if demands from tourists enforce this. If tourists express a desire for more environmentally friendly tourism, in terms of transport options, resource use, accommodation and location of activities, there will be more support for introducing these measures.

Only when ecotourism activities become widely available and well promoted will it be possible to ascertain how popular they are - this is a major problem in establishing ecotourism. Business owners, local people and the tourism planning authorities have all shown a strong preference for expanding current tourism activities, rather than introducing ecotourism. In interviews, these groups expressed a desire to increase tourist numbers and keep people in the town centres, where they will spend money in their businesses, rather than disperse them. It is these groups, particularly the planning authorities, who are largely responsible for the development of tourism. Tourists can only express a preference for environmental activities if these are available, but they are unlikely to be initiated by the stakeholders identified above. It is therefore vital that environmentalists begin to organise ecotourism activities independently, alongside educational activities about the benefits of ecotourism.

4.4 Temporal dispersal of tourists

Whilst dispersing tourists throughout the region will reduce congestion and overcrowding, reducing numbers at peak times, such as the summer months and weekends, is also desirable. This is when the negative impacts are most concentrated and there is most pressure on the resources in the area. This is a more difficult problem to resolve than spatial dispersal. People visit during these times as they are the holiday periods in India. Restricting people from visiting at these times will be difficult and unpopular. If tourists can be dispersed more evenly throughout the region and their behaviour patterns adapted to more sustainable activities, the concentration of tourists at peak times should become less of a problem.

5 Conclusions and policy implications

With a wealth of biodiversity, the Mahabaleshwar-Panchgani region has definite potential for ecotourism. However, previous developments mean that ecotourism cannot follow the pattern successful in other regions. Wilderness cannot be recreated and the established tourism infrastructure cannot simply be removed or

ignored. Any ecotourism plan must seek to adapt the existing pattern of tourism, despite the difficulties in achieving this. Globally, ecotourism should focus more strongly on the problems in existing tourist destinations, such as Mahabaleshwar and Panchgani, rather than developing new destinations. There is an argument that mass tourism cannot be environmentally friendly or that ecotourism cannot be successful on a large scale (Fennell [17]; Barkin [18]). The presence of mass tourism in many destinations is unlikely to change, however, so the priority must be to adapt it to a more sustainable form of tourism, rather than focus on the preferences of the exclusive ecotourism sector.

The proposed zoning plan provides a new solution to the problems facing Mahabaleshwar and Panchgani. The implementation of this plan will require decisive action and legislation to ensure that the changes are enforced. This has not happened in the past because there is no desire for change amongst key stakeholders, notably business owners, planning committees and the local government. Education is important to changing attitudes and should remain an important component of any ecotourism proposal. However, in a region where tourism already exists, economic benefits will outweigh any amount of education. It is therefore imperative that ecotourism maintains the level of income generated by current tourism practices.

This study raises questions about the extent to which anyone has the right to modify the development path of a region. At present, most stakeholders are happy with the current pattern of tourism. It could be argued that agriculture causes more tangible damage in the region, without generating the same levels of employment or income, and that this should be the focus of restrictions and legislation, rather than tourism. Despite this criticism, however, the benefits of current tourism practices do not justify the extent of the damage caused. If more sustainable activities can maintain the level of income currently generated, then this must be the aim of all concerned. Further research is required to determine whether there is sufficient demand for environmental tourism to maintain current income levels. Whilst there is plenty of research regarding ecotourists from developed countries, there is very little research concerning tourists from developing nations and their perspectives on ecotourism. Van der Duim and Caalders [19] argue that a concern for nature is mainly a developed world interest. If ecotourism is to be successfully developed in the study region, it is important to determine the extent to which this is true.

A more sustainable, environmentally sound pattern of tourism in Mahabaleshwar and Panchgani will require a slow transition in behaviour and attitudes, instigated by environmentalists, supported by tourists and followed by local people and businesses, either through desire or necessity. If this can be achieved, then this region could provide a framework for promoting ecotourism in developed tourism destinations, both in India and throughout the world.

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