

Determining Entrance Fees to National Parks

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INTRODUCTION

The entrance fees to national parks can be important tools for a sustainable use of forest resources. They are tools that can transfer resources from the rest of the economy to natural parks. This resource can be used for national park management and hence ensure a continued recreational service that national parks will provide to future generations. The entrance fees can also be used to transfer benefits from wealthier park visitors to lower-income visitors. The entrance fees can be used to eliminate congestion inside some national parks that is a major cause of the environmental deterioration during the peak seasons, and to promote visits during the low season. For the entrance fees to national parks to perform these tasks, one needs to pay greater attention on how the entrance fees are determined.

On the contrary, when lack of attention is given to the determination of the entrance fees, undesirable outcomes are inevitable. Setting an entrance fee too low is a politically attractive strategy, but this low entrance fee tends to damage national park management in the long run. Lack of sufficient revenue resulted from the low entrance fee will put a limit to national park management, hence the quality of park recreational services cannot be maintained. This inappropriate entrance fee will allow some wealthy visitors to benefit from a national park at the expense of low-income visitors. Congestion, over-utilization and environmental degradation during peak periods are partly results of inappropriately low entrance fees. Lastly, determining the entrance fee in a manner that discriminates between the local and foreign visitors will raise the park revenue, but may unnecessarily jeopardize the image of the overall tourism industry of the country.

Given that an entrance fee to a national park is a double-edged sword, it is vital that the public begins to pay greater attention to how entrance fees are determined in Thailand. This article intends to illustrate how the entrance fees to national parks can be determined so that it can perform its function as a tool that helps maintain a *sustainable* and *fair* utilization of national park resources.

HOW TO DETERMINE AN ENTRANCE FEE

The traditional concept often used when pricing public goods¹ is the British museum approach. The argument goes like this. Once the museum is established, each additional person who visits the museum will not incur an additional cost to the museum. Because an additional visitor does not incur an additional cost to the museum, there is no economic reason to collect an entrance fee, at least from the marginal cost concept. This British museum concept of pricing may work well if the subject is a pure public good. But in reality, such pure public goods are rarely observed, and in many cases, particularly national parks, some form of pricing is essential. The following are a few strategies that can be used for pricing or determining entrance fees to national parks.

Marginal cost pricing

This British museum argument seems to make sense under some strict textbook conditions that a commodity is purely a public good but it generally fails to yield practical solutions. For instance, in the case of national parks that generally provide public goods to the visitors in the form of scenic views, this public good cannot generally be consumed in isolation. Very often there is a close complementarity between national park scenic views and some other private goods such as roads or parking spaces; that is, in order for a visitor to enjoy the scenic view there is a need for him/her to take a ride on a paved road and park his/her vehicle in the parking lot. Although an additional visitor will not reduce the amount of scenic views consumed by others, this additional visitor will consume road and parking spaces. For this reason, there is a need to collect an entrance fee from the visitors so that sufficient resources can be transferred to national parks for providing a sufficient level of park services. This concept of national park pricing is often known as marginal cost pricing.

Services that are considered essential inside national parks include, for instance, roads, parking space, safety, restrooms, or waste treatment facilities. Some national parks may include higher cost services such as

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nature study centre or other forms of educational services that are demanded by the visitors. Because an increase in the number of visitors to a national park will imply an increase in the level of these services, there is an economic justification to collect an entrance fee so as to cover these expenses.

Marginal benefit pricing

Marginal benefit pricing, on the other hand, aims to set an entrance fee to a national park according to the level of recreational benefits each park provides. Larger national parks that are endowed with richer resources or more attractive sceneries such as Khao Yai National Park or Doi Inthanon National Park may impose a higher entrance fee compared to smaller national parks with fewer attractions.

The rationale for setting an entrance fee according to the level of recreational services is to allow larger or more popular national parks to generate extra revenue that can be used to cross-subsidize smaller or less popular national parks that may not generate sufficient revenue to cover their operational costs. This extra revenue may also be used to help establish new national parks as well.

Adis (1998) employs the Contingent Ranking Method to determine an entrance fee and finds that, by pricing national parks according to the level of recreational benefits they generate, an entrance fee should be set at 40 Baht per person for Doi Inthanon National Park, 20 Baht per person for Mae Sa Waterfall, and no entrance fee should be collected at Doi Suthep (as is currently practiced at Doi Suthep). A study conducted by the Japan Bank for International Cooperation (JBIC), using the Double Bounded Contingent Valuation Method, suggests that the entrance fees to Khao Yai National Park and Kho Samed National Park should be raised from 20 Baht per person to 50 Baht per person (JBIC 2001).

Congestion pricing

The third rationale for collecting entrance fees to national parks is to help national parks overcome crowdedness during the peak visit periods. In Thailand, Doi Inthanon National Park in Chiang Mai Province can become very crowded during the high seasons such as New Year or Songkran festivals. Marine national parks such as Kho Samed also experience a high visit rate during the summer season as well. High visit rates observed in many national parks create congestion problems among the visitors. This congestion poses two problems for national park management. First, it tends to result in environmental degradation and hence shortens the life span of national parks. Second, it tends to reduce the overall satisfaction of visitors when national parks become congested.

Paitoon (2000) adopts the Dichotomous Choice Contingent Valuation Method and finds that the satisfaction of a visitor from visiting Kho Samed will firstly increase as the number of visitors on Kho Samed increases. But after a certain level, too many visitors (congestion) will begin to lower one's recreational satisfaction. (See Figure 1). Although an increase in the number of visitors may lower the level of satisfaction of an individual visitor, the greater number of visitors on the Island will also generate greater utilization and benefits. The question concerning this congestion problem is therefore the trade-off between the loss of individuals' satisfaction when the number of visitors increases and the gain from having a larger number of visitors benefiting from the Island. Figure 2 shows the final outcome of the overall recreational satisfaction when the number of visitors increases on Kho Samed. To maximize the overall satisfaction of all the visitors, the study suggests that the visit rate on Kho Samed during the peak period needs to be reduced by about 25 percent. To achieve this optimum visit rate, the study proposes that the entrance fee to Kho Samed be set at 40 Baht per person for long weekends, 27 Baht per person for weekends, and 16 Baht per person for weekdays.

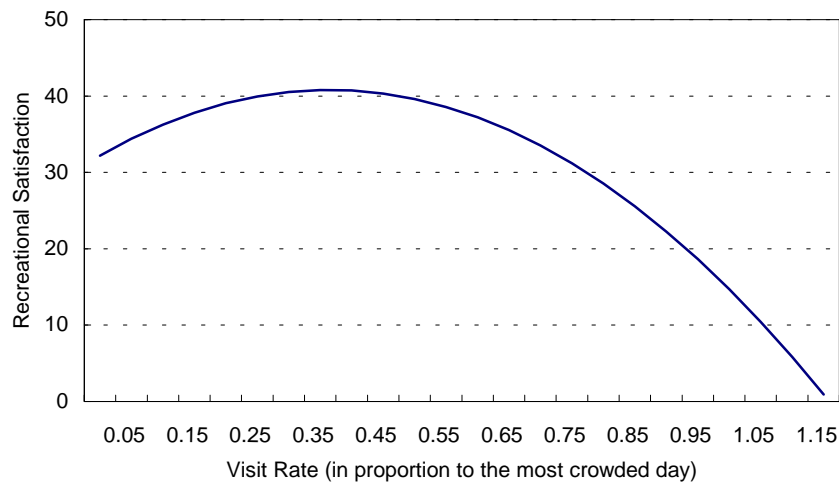
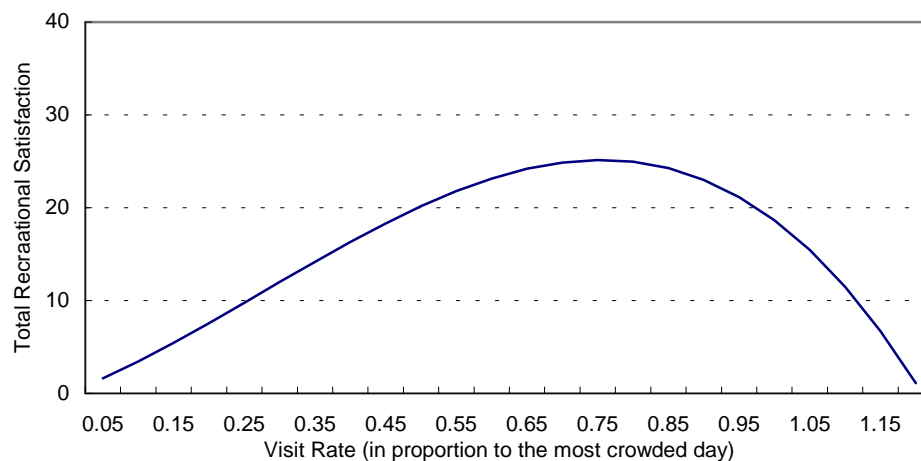
This type of congestion pricing is desirable, as it tends to achieve dual objectives: to reduce congestion so as to help mitigate the pressure on the environment during the peak seasons, and to maximize the overall benefit from national park utilization.

Pricing differential

A price differential strategy or price differential is desirable when it is properly designed. In the case of determining entrance fees to national parks, a price differential strategy means setting different entrance fee levels for different types of park uses or different park users.

The congestion pricing technique above that sets the weekend entrance fee higher than the weekday fee is an example of a price differential strategy. Other forms of price differential can also be considered for Thai national parks. Establishing a day pass fee vs. an annual pass fee vs. lifetime membership fee is a tool that may be used to differentiate between "casual" and "serious" park visitors. If casual visitors tend to utilize national parks in a more damaging manner than serious or professional park visitors, then an entrance fee for a day pass for a single visit has to be set at a level higher than that of an annual pass fee or lifetime membership fee.

For social objectives, the entrance fee for handicap visitors and senior citizens can be set lower than the normal fees. And to ensure that low-income visitors will have the opportunity to visit national parks, free access may be allowed on some special holidays such as Labour Day or Children's Day. For educational reasons, school children visiting national parks on school trips may be allowed free entrance as well.

Figure 1 The individual recreational satisfaction**Figure 2 The overall recreational satisfaction**

Lastly, since foreigners tend to have high willingness-to-pay to visit some national parks, there is a tendency to impose a higher entrance fee for foreigners, as is currently practiced in Thailand (a foreigner is charged 200 Baht while a local Thai is charged 20 Baht). While this pricing strategy may help raise the revenue, it may unnecessarily jeopardize the image of the overall tourism industry of Thailand.

A more diplomatic pricing strategy that ought to be considered for foreigners may be to impose the same basic entrance fee as for local Thais at the gate, but special services may be offered to foreigners at a higher price. For example, some national parks may provide English guided tours at a price higher than normal guided tours. English information booklets may be provided at a higher price compared to the booklets printed in Thai.

These strategies ought to raise extra revenue for national parks without necessarily creating an unpleasant feeling as setting an entrance fee for a foreigner 10 times higher than for a local Thai, which is currently practiced.

ENTRANCE FEES IN THAILAND AND RECOMMENDATION

Currently, the way entrance fees to national parks in Thailand are determined indicates that some efforts have been given to designing an entrance fee structure so as to reflect some of the strategies described above. For instance, an entrance fee to an inland national park is currently priced at 20 Baht per person, while that to an exotic marine national park is priced at 40 Baht per

ประเภท	อัตราค่าเข้าชม (บาท)
1. ผู้ไทย - ผู้ใหญ่	10
2. ผู้ไทย - เด็ก	20
3. ผู้ไทย - ผู้สูงอายุ	20
4. รถจักรยานยนต์	30
5. รถยนต์ส่วนบุคคล	50
6. รถโดยสารสาธารณะ	100
7. รถบรรทุก	200
8. รถบรรทุก 6 ล้อ	300

The current entrance fee structure to Khao Yai National Park.

person. Children are charged at half price compared to adults. Vehicles are also priced separately depending on size. The latest innovation in the Thai entrance fee structure was to charge foreigners 200 Baht per person while the local Thais are paying 20 Baht per person.

This indicates that there are rooms to improve the structure of entrance fee to national parks in Thailand. This article recommends that the entrance fee structure of the national parks in Thailand be adjusted in the following manner:

- The overall level of an entrance fee should be increased from 20 Baht per person to around 50 Baht per person.
- Larger, more attractive and easily accessible national parks should be priced higher than smaller, less attractive and remote national parks.
- A more aggressive price differential strategy should be adopted, particularly the price differentials during long weekends, weekends

and weekdays. This is to help reduce congestion, increase the overall satisfaction and reduce environmental degradation. Annual passes and lifetime membership should also be explored.

- Both local Thai and foreign visitors should pay the same entrance fee, but special services should be arranged for foreign visitors, which should be provided at a relatively higher price.
- Entrance fee exemptions for the handicapped, elderly, or school children visiting national parks on school trips should be introduced.

Setting an entrance fee at an appropriate level requires analytical tools such as economic and statistical techniques in order to carry out an in-depth analysis on the consumer preferences toward national park recreational services as demonstrated in Adis (1998), Paitoon (2000) and JBIC (2001).

The benefit in adopting these recommendations is to better provide a mechanism that efficiently transfers part of the national park recreational benefits from visitors to the national park in the form of an increase in revenue. This revenue can then be used to maintain a continued flow of recreational services and hence sustainable utilization of national parks in the long run.

ENDNOTE

- ¹ Public goods are strictly defined as commodities that are non-rival in consumption and non-excludable. For example, national defence is one of the public goods because the marginal cost of an increase in consumption is zero and one consumer cannot exclude others from consuming the goods.

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