

## **Willingness to Pay in Taman Negara: A Contingent Valuation Method**

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### **ABSTRACT**

The main attractions of national parks include its scenic beauty, rainforest and wildlife. An appropriate pricing policy in national parks can be used as a tool to not only achieve successful and sustainable management of national parks, but also provide quality products and services at fair prices to visitors. The central question is how to establish an appropriate pricing policy for national parks? Park resources such as scenic beauty and conservation of endangered species are not traded in the market place like many other commodities so they require the use of non-market valuation techniques. One of the methods commonly used for non-market valuation is the Contingent Valuation Method (CVM). With Willingness to Pay (WTP) as the elicitation method, CVM was used to determine the appropriate pricing policy for the sustainable management of Taman Negara National Park (TNNP). Respondents were asked the maximum amount they were willing to pay for the non-market goods available at TNNP. This provided an estimate of the mean values for setting the price for licenses and permits. In addition to estimating the mean values, the study also identifies socio-demography, visit and paying characteristics of visitors. The study employs 180 visitors to TNNP, who participated in closed-ended questionnaires through interviews. Findings of the study reveal that visitors were willing to pay more for entrance fees. This study presents implications to policy makers to guide future management of TNNP. Results of this study facilitate in establishing an efficient and realistic pricing policy for TNNP.

**Keywords:** Willingness to pay, national park ecotourism and sustainable tourism.

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## INTRODUCTION

Ecotourism became a buzzword in the early 1990s. Tourism is the world's fastest growing industry and its fastest growing component is ecotourism (Ecotourism Society, 1998). Ecotourism growth is estimated at 10-15 % annually (Lindberg, 1991). Ecotourism/nature tourism was growing globally three times faster than the tourism industry as a whole in 2004 (The International Ecotourism Society [TIES], 2005). In the context of Malaysia, ecotourism is also the fastest growing form of tourism. An estimated amount of 481,900 or 6.7 % of the more than 7 million tourists into Malaysia in 1994 were involved in the ecotourism industry (Ministry of Science, Technology and Environment [MOSTE], 1998). Ecotourism in Malaysia is primarily dominated by the tropical rainforest, marine ecosystems and wetland ecosystems (MOSTE, 1998).

Sustainable tourism has become a catch-all phrase for forms of tourism development. Ecotourism is considered the most typical form of sustainable tourism. One of the criteria of sustainable tourism is the optimal use of all resources, while simultaneously maintaining ecological processes and conserving natural heritage and biodiversity (UNEP, 2006). A critical question here is how to manage all these resources to reach sustainable tourism. Under certain circumstances, the market for environmental goods and services do not exist or are not well-designed. A viable alternative may be the use of the constructed or hypothetical market approach i.e., the Contingent Valuation Method (CVM). The CVM elicits consumer preferences of goods and services that are not traded directly to the consumer in the market. Monetary values of the environmental goods and services is established through the setting up of a 'hypothetical' market. A survey question is used to elicit willingness to pay (WTP) for a hypothetical provision of environmental goods and services.

This paper presents the findings on the investigation of the WTP study among visitors to Taman Negara National Park (TNNP). Findings of this study provide valuable information to TNNP to devise the charges of permits and licenses especially the entrance permit which has been implemented since the 1970s. The specific objectives of this study are: (1) To identify the socio-demography of visitors; (2) To identify the characteristics of visits of visitors; and (3) To identify the characteristics of paying and any differences in WTP among visitors.

### Definitions of Ecotourism

Terms like nature-based tourism, environment-friendly tourism, alternative, responsible, ethical, sustainable, green and appropriate tourisms have all been used to refer to ecotourism (Valentine, 1993:108). Similarly, numerous definitions of ecotourism exist. Hector Ceballos-Lascurain (1988:14) defined ecotourism as:

*. . . travelling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas.*

Then, in 1993, he came up with another definition endorsed by the International Union for the Conservation of Nature and Natural Resources (IUCN), which defines ecotourism as:

*environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features – both past and present) that promotes conservation, has low visitor impact and provides the beneficially active socio-economic involvement of local populations.* (Ceballos-Lascurain, 1993).

This study will also adopt this definition. This definition has been endorsed by the Ministry of Culture, Arts and Tourism (MOCAT, 1996). The definition stresses: (1) low impact on the environment and on local culture; (2) covers nature as well as culture; (3) prevention of damage as far as possible; (4) repairing whatever damage is unavoidable; and (5) benefits for the people of the area. This definition is a blend of other definitions, and highlights the fundamental components of ecotourism.

Several other definitions of ecotourism are ‘responsible travel to natural areas that conserves the environment and improves the welfare of local people’ (Western 1993:8) and ‘nature-based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable’ (Australian Commonwealth Department of Tourism, 1994: 17). All these definitions mention three main components of ecotourism namely, (1) nature-based; (2) environmentally-educative; and (3) sustainably-managed. These three main components are called the ‘three dimensions’ of ecotourism (Blamey, 2001). A more recent definition of ecotourism by (Fennell, 1999) has included all three dimensions of ecotourism Fennell’s definition is as follows:

*Ecotourism is a sustainable form of natural resource-based tourism that focuses primarily on experiencing and learning about nature, and which is ethically managed to be low-impact, non-consumptive, and locally oriented (control, benefits, and scale). It typically occurs in natural areas, and should contribute to the conservation or preservation of such areas.* (Fennell, 1999:43).

Valentine’s (1993) definition included four characteristics that ecotourism is (1) based on relatively undisturbed natural areas; (2) non-damaging, non-degrading,

ecologically sustainable; (3) a direct contributor to the continued protection and management of the natural areas; and (4) subject to an adequate and appropriate management regime.

Generally, most conceptual definitions of ecotourism can be reduced to the following: ‘ecotourism is tourism and recreation that is both nature-based and sustainable’ (Food and Agriculture Organization [FAO], 1997). Some researchers believe that there is an overlap between nature-based tourism and ecotourism. However, there is a clear distinction between the two. Both types of tourism are ecologically sustainable; however, nature-based tourism only involves experiences in the natural environment, while ecotourism puts emphasis on the ‘understanding, appreciation and conservation’ of natural areas and environment (Valentine, 1993). Also, compared to ecotourism, nature-based tourism does not necessarily mean sustainable (Goodwin, 1996). Ecotourism can fit in with the conditions of sustainable tourism because it balances economic benefits while still reducing environmental stress (Inskip, 1991). However, ecotourism cannot be automatically sustainable. It also has to be economically viable, environmentally appropriate and socio-culturally acceptable. While the ecotourism industry clearly brings numerous benefits to society, there may also be many consequences from the massive growth of ecotourism.

### **Contingent Valuation Method and Willingness to Pay**

CVM is ‘a tool to place an amount or value on goods and services that are typically not exchanged in the market place’ (Ajzen and Driver, 1992). The CVM tool has been the subject of methodological research and applied in estimating both use values and non-use values of environmental goods (Cummings *et al.*, 1986; Mitchell and Carson, 1989). It is called ‘contingent’ because respondents are asked how they would act if they were placed in certain situations (Mathews *et al.*, 2001). CVM is a questionnaire-based approach that is designed to estimate the economic value of non-market goods (Cummings *et al.*, 1986; Mitchell and Carson, 1989).

One of the most important concepts in CVM is willingness to pay (WTP). WTP is ‘the maximum amount consumers are prepared to pay for a good or service’ (ADB, 2007). More specifically, WTP is the amount of money that a person is willing and able to pay to enjoy recreational facilities (McConnel, 1985). It measures whether an individual is willing to forego their income in order to obtain more goods and services, and is typically used for non-market goods.

### **Taman Negara National Park**

Taman Negara National Park (TNNP) is situated in three states: Kelantan, Terengganu and Pahang. Taman Negara literally means national park in the Malay language and is the first national park in Malaysia. TNNP offers a variety of

ecotourism activities, which include forest exploration, river rides, mountain-climbing and cave exploring. The most popular attraction is the canopy walk; the world's longest treetop walk at 450 metres. The canopy walk extends 0.5 kilometres and is elevated 40 metres above the ground.

Table 1 displays the number of local and international visitors to TNNP. There were a total of 37,819 Malaysian visitors (52.8 %) as compared to 33,812 international visitors (47.2 %) in 2005, and 26,149 Malaysian and 32,383 international visitors in 2001. In general the trend of visitor arrival to TNNP is changing whereby there are less international visitors heading to TNNP.

**Table 1** Malaysian and International Visitors to TNNP, 2001-2005

<b>Year</b>	<b>Malaysian visitors</b>	<b>International visitors</b>	<b>Total</b>
2001	26149	32383	58532
2002	30108	30048	60156
2003	33326	20904	54230
2004	31233	28793	60026
2005	37819	33812	71631

Source: DWNP, 2005.

Table 2 lists the charges at TNNP. TNNP imposes six types of charges. Each visitor to TNNP must obtain an entrance permit, which costs RM1.00 per entry. Other charges would depend on the visitors' activities. This study only focuses on the entrance permit.

**Table 2** Charges of Permits and Licences at TNNP

<b>Permit and licences</b>	<b>Charges (RM)</b>
1. Entrance permit	RM1/entry
2. Fishing licence	RM10/person
3. Camera licence	RM5/camera
4. Camping fee	RM1/day/person
5. Canopy walkway	RM5/person
6. Hide	RM5/person/night

Source: DWNP, 2005.

## METHODOLOGY

A questionnaire was designed to gain information on WTP in this study. The Survey questionnaire was chosen because it encourages high response rates, provides

assistance to respondents and is suitable for complex questions. Systematic sampling was applied where every third visitors who entered the park was chosen as a sample. This technique was preferred because it was possible to get a precise sample and it was simple to put in practice. Stratified sampling was also used, and the sample was placed in two groups based on nationality, Malaysians and internationals. Since this study is interested in identifying the differences in WTP between Malaysian and international visitors, the best option was to stratify the sample. The survey was conducted at the gate of TNNP over two periods, 10 -17 July 2004 and 1-13 August 2004. The average time taken for the survey was about 20-30 minutes. The survey resulted in a total of 180 completed questionnaires, 80 Malaysian and 100 international visitors.

The questionnaire was divided into three sections: Characteristics of visit, Characteristics of paying and Socio-demographic characteristics. The first section was designed to obtain information on characteristics associated with TNNP such as sources of information about TNNP and reasons for visiting. The second section was designed to identify the characteristics of paying and the mean value of WTP for entrance fees at TNNP. This section asked respondents whether they were willing to pay if the current charge for entrance fee was increased. The question was posed to discover the willingness of visitors to pay a higher level of fee. This approach is called a 'bidding game' and involved three different prices; low, medium and high. The three different prices were chosen to suit both Malaysian and international visitors, and to give them a choice in reacting to the question until their maximum WTP was established. The respondents will be asked if they are willing to pay RM3 as entrance fee. The bid level will increase to RM10 if they reply positively, but if they reply negatively the bid level will be decreased. The respondents will be asked to state the maximum they were willing to pay again. The three different sets of prices used in this study are shown in Table 3.

**Table 3** Three Different Levels of Price for Entrance Permit

<b>Level</b>	<b>Entrance Permit (RM)</b>
Low	3
Medium	10
High	30

*Source:* Author (2005).

The final section of the questionnaire gathered information on the demography of visitors such as nationality, age, gender, marital status, education and income. The questionnaire was prepared in two languages, English and Bahasa Melayu. It was originally designed in English and translated into Bahasa Melayu by a native

speaker. Statistical Package for Social Sciences (SPSS) was chosen to analyse the visitors' data. Descriptive analyses such as mean and frequencies were applied to obtain information on socio demographic and economic profiles and respondents' WTP.

## Survey Findings

### *Visitors' Profiles*

Table 4 displays the summary of the visitors' profiles. By gender, the majority of visitors (60.0%) were male. More than half (53.3%) were married. Most of the visitors (41.7%) were between 26 to 35 years old, followed by the age group 18 to 25 years old (31.7%). More than half (55.6%) of the visitors were international while the rest (44.4%) were Malaysians. In terms of educational background, 27.2% of the visitors had completed secondary education followed by 26.7% and 23.9% had attained first degrees and masters/PhD, respectively. Most visitors (30.0%) held professional jobs such as teachers and doctors. The second and third highest group of visitors were skilled non-manual (18.9%) and skilled manual (17.2%) workers. In terms of income, majority of visitors (52.8%) earned an income of less than US\$1000. This was followed by an income group of between US\$1001-US\$2000 (17.2%). Most of the visitors in this study (46.7 %) had paid for an entrance permit (during visits to other national park). Majority of visitors (53.9%)

**Table 4** Profile of Visitors

Characteristics	Percentage	n
<b>Gender</b>		
Male	60.0	108
Female	40.0	72
<b>Marital status</b>		
Single	45.0	81
Married/partner	53.3	96
Prefer not to say	1.7	3
<b>Age</b>		
18-25	31.7	57
26-35	41.7	75
36-45	15.6	28
46-55	8.9	16
56-65	2.2	4
65 +	0.0	0

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<b>Nationality</b>		
Malaysian	44.4	80
International	55.6	100
<b>Education level</b>		
No formal education	0	0
Primary school	0.6	1
Secondary school	27.2	39
Diploma	21.7	39
First degree	26.7	48
Masters/PhD	23.9	43
<b>Occupation</b>		
Professional	30.0	54
Managerial	5.6	10
Skilled non-manual	18.9	34
Skilled manual	17.2	31
Unskilled non-manual	12.2	4
Unskilled manual	2.2	4
Retired	5.0	9
Student	2.8	5
Not working for medical reasons	1.7	3
Unemployed	4.4	8
<b>Monthly gross income</b>		
Lower than US\$1000	52.8	9.5
US\$1001 - US\$2000	17.2	31
US\$2001 - US\$3000	12.8	23
US\$3001 - US\$4000	5.6	10
US\$4001 - US\$5000	4.4	8
More than US\$5000	7.3	13
<b>Payment history</b>		
Paid	46.7	84
Never paid	53.3	96
<b>Contribution to WWF</b>		
Have contributed	53.9	97
Never contributed	46.1	83
<b>Members</b>		
Member	17.8	32
Non-member	82.2	14

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*Source:* Author survey (2004)



had made a contribution to World Wildlife Fund (WWF), while only 17.8% of them were members of environmental organizations.

### *Characteristics of Visit*

Table 5 outlines the characteristics of TNNP visits. An overwhelming majority obtained information about TNNP from travel guidebooks such as *Lonely Planet* (95 responses) and family and friends (91 responses). Most of the visitors associated TNNP with the rainforest (158 responses), diversity of species of flora and fauna (93 responses) and wildlife (93 responses). The most popular type of transportation to TNNP was private car (25.4%) followed by tour bus (23.0%), public bus (21.0%) and boat (12.1%). Chalets were the most popular type of accommodation at TNNP

**Table 5** Characteristics of Visit

<b>Characteristics</b>	<b>Visitors (Number of responses/frequency)</b>
<b>Source of information</b>	
Advertisement	55
Travel agent	23
Travel guidebook	95
Internet	46
Travel brochure	47
Family and friends	91
Tour guide	9
<b>TNNP Characteristics</b>	
Rainforest	158
Aboriginal	35
Flora and fauna	93
Scenic beauty	90
Recreation	50
Wildlife	93
<b>Transportation mode</b>	
Public bus	21
Train	11.3
Private car	25.4
Tour bus	23
Flight	2.8
Boat	12.1
Taxi	4.4

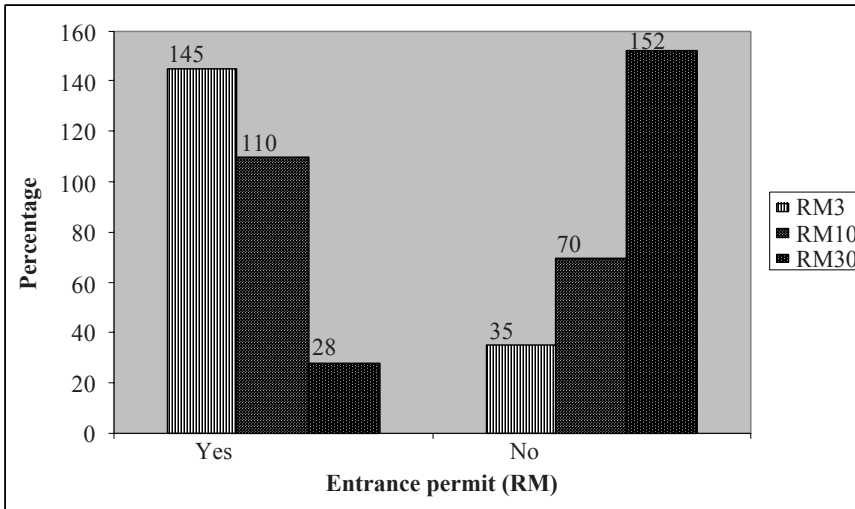
<b>Accommodation type</b>	
Chalet	61.8
Hostel/dorm	21.5
Camping	9.3
Hide	5.4
Cave	2.0
<b>Number of nights</b>	
< 1	17.2
1-2	57.8
3-4	23.3
> 5	1.7
<b>Reasons for visiting</b>	
New experience	93.3
Holiday	90.0
Enjoying the natural beauty of rainforest	72.8
Relaxing	66.7
Wildlife watching	53.4
Escaping from daily life	53.4
Meet new people	35.5

*Source:* Author survey (2004)

(61.8 %), followed by hostel/dormitory (21.5%) and camping (9.3%). More than half (57.8%) of the visitors stayed an average of two nights. Only 1.7% stayed for a longer period (more than five days). The most important reason for visiting TNNP was for a new experience (93.3%). The second and third most popular reasons were holiday (90.0%) and to enjoy the natural beauty of the rainforest (72.8%).

### ***Characteristics of Paying***

This section reports the willingness of visitors to pay a higher cost for an entrance permit. Respondents were given three different prices of entrance permit: low (RM3), medium (RM 10) and high (RM30). The three different prices (RM3, RM10 and RM30) were chosen to suit both Malaysian and international visitors and the price was raised until it reached the visitors' maximum bid. Figure 1 is a diagram displaying visitors' responses to the three different prices of entrance permit. The probability of saying 'yes' decreased as the entrance permit fee increased. The majority of visitors (80.6%) were willing to pay if the entrance permit was RM3. On the other hand, only 15% answered 'yes' when the price reached RM30. From Table 6, more than half (56.1%) wanted charges for entrance permit to go towards



Note: 180 visitors are represented in Figure 1.

Source: Author survey, 2004.

**Figure 1** Visitors' WTP for Entrance Permit

**Table 6** Main Motivations for Willingness To Pay

Motivation	Visitors (%)
1. I have to pay to enter this national park and to use the recreational facilities	43 (23.9)
2. To conserve and preserve this national park for future generations.	101 (65.1)
3. I want better facilities.	20 (11.1)
4. I feel responsible for the local community.	5 (2.8)
	11 (6.1)
5. I get satisfaction from having paid to help TNNP.	
Total	180

Note: Figures in parentheses denote percentages.

Note: 180 visitors are represented in Table 6.

Source: Author survey, 2004.

the conservation and preservation of the park for future generations. Among other motivations for the charges of entrance permit were for the entrance and use of recreational facilities (23.9%) and for better recreational facilities (11.1%).

### ***Mean Value of WTP***

This study found that visitors' mean WTP for an entrance permit was RM13.06 (Table 7). The findings also revealed that international visitors were willing to pay RM18.47 for entrance permits compared to Malaysians, RM6.32.

**Table 7** Mean Value of WTP (in RM)

<b>Respondents</b>	<b>Entrance Permit</b>
Visitors	13.06
Malaysian Visitors	6.32
International Visitors	18.47

*Source:* Author survey, 2004.

### **Conclusions and Implications**

CVM is a unique method that can estimate the value of non-market goods such as protected area resources. Pearce and Moran (1994) believed that WTP is one of the sources of protected areas and a huge flow of finance has come from individual's WTP. This study found evidence that visitors are willing to pay more than the current charges especially for the entrance permit; which is RM1 per entry. In conclusion, WTP can be used as a tool for revising pricing policies in protected areas.

The optimum pricing strategy should be a combination of policy objectives and information gathered about visitors' WTP (Laarman and Gregersen, 1996). Using the information gathered from this study, three alternatives for revising the charges of entrance permits are presented. The first option is to maintain status quo and for TNNP to keep entrance permit fees low (RM1) for both Malaysian and international visitors. This option is economically inefficient and encourages an inefficient pricing policy. Furthermore, this study has proof that visitors to the park are willing to pay higher fees. The second option for TNNP is to maintain status quo for Malaysian visitors but to increase the fees for international visitors. By employing this option, TNNP's revenue will increase but it will raise issues of price discrimination between international and Malaysian visitors. The third option is to increase charges for both Malaysian and international visitors. This option clearly brings revenue maximisation, thus establishing an efficient pricing system.

## REFERENCES

- Ajzen, I. and Driver, B.L. (1992) Contingent value measurement: On the nature and meaning of the willingness to pay. *Journal of Consumer Psychology*, **1**, 297-316.
- Asian Development Bank (ADB) Retrieved March 19, 2007 from [http://www.adb.org/Documents/Guidelines/Eco\\_Analysis/glossary.asp](http://www.adb.org/Documents/Guidelines/Eco_Analysis/glossary.asp)
- Blamey, R.K. (2001) Principles of ecotourism. In D.B. Weaver. *The Encyclopedia of Ecotourism*. Oxon, UK: Cabi Publishing.
- Ceballos-Lascurain, H. (1991) Tourism, ecotourism and protected areas. In J.A. Kusler, *Ecotourism and resource conservation* (pp. 54-61). Ecotourism and Resource Conservation Project, Washington D.C.
- Ceballos-Lascurain, H. (1996) *Tourism, Ecotourism and Protected Areas*. Gland, Switzerland: World Conservation Union.
- Cummings, R.R., Brookshire, D.S., and Schulze, W.D. (1986) *Valuing environmental goods: An assessment of the "Contingent Valuation Method"*. Totowa, NJ: Rowman Allanheld.
- DWNP (2005) Annual Report 2003. Kuala Lumpur: Department of Wildlife and National Parks.
- Ecotourism Society (1998) *Ecotourism Statistical Fact Sheet: General Tourism Statistics*. Washington DC: Ecotourism Society.
- FAO (1997) Ecotourism And Other Services Derived From Forests In The Asia-Pacific Region: Outlook to 2010. Retrieved March 19, 2007 from <http://www.fao.org/DOCREP/W7714E/w7714e06.htm>
- Fennell, D.A. (1999) *Ecotourism: An introduction*. London: Routledge.
- Goodwin, H. (1996) In pursuit of Ecotourism. *Biodiversity and Conservation*, **5**, 277-291.
- Inskip, E. (1991) Environmental planning for tourism. *Annals of Tourism Research*, **14**, 11-135.
- Laarman, J.G. and Gregersen, H.M. (1996) Pricing policy in nature-based tourism. *Tourism Management*, **17**, 247-254.
- Lindberg, K. (1991) *Policies for maximising nature tourism's ecological and economic benefits*. Washington, DC: World Resources Institute.
- Mathews, L.G., Kask, S., Rotegard, L. and Stewart, S. (2001) Using economics to inform national park management decisions: A case study on the Blue Ridge Parkway. Retrieved April 13, 2006 from <http://www.georgewright.org/56mathew.pdf>
- McConnell, K.E. (1985) *The economics of outdoor recreation*. Amsterdam, The Netherlands: Elsevier Science.
- Mitchell, R.C. and Carson, R.T. (1989) *Using Surveys to Value Public Goods: the Contingent Valuation Method* (Resources for the Future). Washington, D.C.

- MOSTE. (1998) *Assessment of biological diversity in Malaysia: Country study of biological diversity*. Kuala Lumpur: Ministry of Science, Technology and the Environment.
- The International Ecotourism Society (TIES) (2005) Ecotourism Fact Sheet. Retrieved March 12, 2007 from <http://206.161.82.194/WebModules/WebArticlesNet/articlefiles/15-NEW%20Ecotourism%20Factsheet%20Sept%2005.pdf>
- UNEP (2006) Sustainable Development of Tourism. Retrieved March 8, 2007 from <http://www.unep.org/pc/tourism/sust-tourism/home.htm>
- Valentine, P.S. (1993) Ecotourism and nature conservation: a definition with some recent developments in Micronesia, *Tourism Management*, **14**, 107-115.
- Western, D. (1993) Defining ecotourism. In K. Lindberg and D.E. Hawkins (Eds.), *Ecotourism: A guide for planners and managers* (pp. 7-11). Vermont: The Ecotourism Society.
- World Wildlife Fund (WWF) (1990) *Survey of Ecotourism Travel to Central America*.