UNIVERSITI PUTRA MALAYSIA

WILLINGNESS TO PAY FOR TURTLE CONSERVATION AND THE FINANCIAL VIABILITY OF RANTAU ABANG TURTLE SANCTUARY, TERENGGANU

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By

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Untuk mak, abah, taufik, ika ……..……..…

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the partial requirement for the degree of Master of Science

Willingness to Pay for Turtle Conservation and the Financial Viability of Rantau Abang Turtle Sanctuary, Terengganu

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March 2002

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Faculty : Economics and Management

Conservation is an important measure to ensure that the endangered turtles will be able to survive for the benefit of future generations. Cardinal approach i.e. Contingent Valuation Method was used in this study to evaluate the willingness to pay for conservation of turtles in Rantau Abang, Terengganu. The study also estimated the benefits of turtle conservation, evaluated the viability of the existing Turtle Sanctuary and identified the factors that influenced society's willingness to pay for turtle conservation based on a survey of different groups of respondents.

Three different groups of respondents i.e. group A (residents), group B (visitors to Rantau Abang Turtle Sanctuary) and group C (tourists) were classified in this study. Each group consists of a different number of sample sizes i.e. 110 for group A, 100 and 130 for groups B and C respectively. In the estimation of benefits for each group of respondents, the Contingent Valuation Method yielded mean values of RM10.02, RM107.11 and RM61.93 using the Logit technique.

It is also found that among the factors that influenced willingness to pay for turtle conservation for groups A and B were bid, monthly income and age. For group C, bid, monthly income and membership in some environmental organisations were the main factors influencing peoples' willingness to pay.

The study also evaluated the role of government contribution to the viability of the project. Using RM10 as the ticket price and with the government allocation of RM150,000, the financial analysis showed that the Net Present Value (NPV) was RM1,327,603.45. However, without government allocation, the NPV was negative RM6,229.77. This infers that the government contribution is essential to ensure the viability of the project. In fact, with the current contribution of RM150,000, the ticket price could be reduced to RM5 and the project would still be viable. At this ticket price, the NPV was RM263,649.15.

A sensitivity analysis showed that the project was still viable even with a 10% decrease in total cash inflow or with a 10% increase in total cash outflow. Further analysis was carried out to determine the amount of government allocation needed for the project to reach break-even point only. At the ticket price of RM10, the amount of government allocation that made the NPV equaled zero was RM700.59 per year. At the price of RM5, the amount of government allocation was RM120,350.59 per year.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi sebahagian keperluan untuk ijazah Master Sains

Kesanggupan Membayar untuk Pemuliharaan Penyu dan Analisis Kewangan Santuari Penyu Rantau Abang, Terengganu

Oleh

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Pemuliharaan adalah penting bagi memastikan penyu akan terus hidup untuk generasi akan datang. Tujuan kajian ini dijalankan adalah untuk menganggar kesanggupan membayar untuk pemuliharaan penyu di Rantau Abang, Terengganu. Di samping itu, ia juga menganggar faedah daripada pemuliharaan penyu, menilai sama ada Santuari Penyu yang ada sekarang berdaya maju atau tidak dan mengenalpasti faktor-faktor yang mempengaruhi kesanggupan membayar untuk pemuliharaan penyu di Rantau Abang, Terengganu berdasarkan kumpulan responden yang berlainan.

Tiga kumpulan responden telah diklasifikasikan kepada kumpulan A (penduduk tempatan), kumpulan B (pelawat Santuari Penyu) dan kumpulan C (pelancong). Setiap kumpulan merangkumi bilangan sampel yang berbeza iaitu 110 untuk kumpulan A manakala 100 dan 130 untuk kumpulan B dan C. Faedah yang dianggarkan dengan adanya pemuliharaan penyu untuk setiap kumpulan berdasarkan Kaedah Penilaian Kontingen adalah RM10.02, RM107.11 dan RM61.93.

Bagi kumpulan A dan B, analisis logit menunjukkan di antara faktor-faktor yang mempengaruhi kesanggupan membayar adalah bida, pendapatan bulanan dan umur. Sementara itu, bagi kumpulan C, faktor-faktor yang mempengaruhi kesanggupan membayar adalah bida, pendapatan bulanan dan keanggotaan dalam organisasi alam sekitar.

Kajian juga menilai peranan peruntukan kerajaan dalam menentukan sama ada projek ini berdaya maju atau tidak. Dengan menggunakan harga tiket RM10 dan peruntukan kerajaan sebanyak RM150,000, analisis kewangan menunjukkan Nilai Kini Bersih (NKB) adalah RM1,327,603.45. Namun, tanpa peruntukan kerajaan NKB adalah negatif iaitu RM6,229.77. Ini menunjukkan bahawa perlunya peruntukan kerajaan dalam memastikan projek ini berdaya maju. Dengan peruntukan kerajaan sebanyak RM150,000 dan harga tiket diturunkan ke RM5, analisis kewangan menunjukkan projek ini masih berdaya maju. Dengan harga tiket ini, NKB adalah RM263,649.15.

Analisis Kepekaan menunjukkan projek ini masih berdaya maju walaupun dengan penurunan sebanyak 10% dalam aliran tunai masuk atau pun peningkatan 10% dalam aliran tunai keluar. Analisis selanjutnya adalah menentukan amaun peruntukan kerajaan bagi memastikan titik pulang modal bagi projek ini. Dengan harga tiket RM10, amaun peruntukan kerajaan yang diperlukan untuk menjadikan NKB bersamaan dengan sifar adalah RM700.59 setahun manakala pada harga tiket RM5 adalah RM120,350.59 setahun.

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LIST OF ABBREVIATIONS

WTP	Willingness to Pay
CVM	Contingent Valuation Method
CBA	Cost Benefit Analysis
NPV	Net Present Value
IRR	Internal Rate of Return
BCR	Benefit Cost Ratio

CHAPTER I

INTRODUCTION

Coastal Setting

Malaysia lies on the Malay Peninsula (West Malaysia) in tropical Southeast Asia, with Thailand bordering to the north, the Straits of Malacca to the west, the South China Sea to the east, and the island of Singapore to the south. The country also occupies the northern one-third of the island of Borneo (East Malaysia), with Indonesia to the south, the South China Sea to the north, and the Sulu Sea and Celebes Sea to the east.

Malaysia has a long coastline. The total length is approximately 4,800 km, with 1,963 km in Peninsular Malaysia, 1,802 km in Sabah and 1,035 km in Sarawak. The status of these coastlines is determined by the influence of the natural forces of sun, wind, rain, storms and waves and the impact of man's activities.

The coasts of Malaysia are of vital economic importance. They support the livelihood of thousands of fisherfolks who go out to sea daily and bring in their harvest of

fish, prawns and squids which are essential food for the population. Any damage to the coast, natural or anthropogenic, will have negative implications.

Tourist Arrival and Receipts

Tourism in Malaysia has become an important industry since 1980's. In 1959, the national government income from tourism industry was only RM 3 million; but since 1990, tourism industry has become one of the main contributors to Malaysian foreign exchange earnings (Tourism Malaysia, 1995). In 1985, income from tourism industry was RM 1.73 billion putting it at sixth place in foreign exchange earnings. While in 1990, the contribution of this industry had increased to RM 4.41 billion and tourism became the third biggest contributor to the foreign exchange earnings.

In 1990's, the growth of the tourism industry was quite favourable. Total tourist arrival had reached more than 7 million in 1994, the highest tourist arrival destination in the ASEAN region. Table 1.1 shows tourist arrivals and receipts from 1995 to 2000. In 1995, tourism industry was moderate compared to 1994 figure. Tourist arrivals were 7.5 million and total income via tourist receipts were RM 9.175 billion, a growth of 3.8% and 10.6% respectively (Tourism Malaysia, 1995).

Table 1.1 : Tourist Arrival and Receipts , 1995 - 2000

	1995	*1996*	*1997*	*1998*	*1999*	*2000*
Tourist Arrival (million)	7.5	7.1	6.2	5.6	7.9	10.2
Tourist Receipts (RM billion)	9.175	10.354	9.669	8.580	12.321	17.3

Sources: Tourism Malaysia, various years

Tourist arrivals however declined from 6.2 million to 5.6 million from 1997 to 1998 because of the economic crisis. But based on statistics from Tourism Malaysia (1999), tourist arrival increased by 43.8% to 7.9 million while total income via tourist receipts increased to RM12.321 billion in 1999. In the year 2000, tourist arrivals increased further by 28.9% to 10.2 million while tourists receipts increased to RM 17.3 billion (Tourism Malaysia, 2000). From January to March 2001, tourists arrivals were 4.9 million compared to 3.2 million in the same period in 2000, an increase of 54.3% (Tourism Malaysia, 2001).

Table 1.2 shows tourist arrivals in Terengganu from 1995 to 2000. It shows that both the domestic and foreign tourists have been increasing year by year. The highest tourist arrivals were in 1997, i.e. 1.6 million domestic and 2.3 million foreign tourists. Similar to national trend, tourist arrivals declined from 1997 to 1998 due to economic crisis from 1.6 million to 0.9 million for domestic tourists while 2.3 million to 0.1 million for foreign tourist due to the economic crisis.

Table 1.2 : Tourist Arrival in Terengganu, 1995 - 2000

	1995	*1996*	*1997*	*1998*	*1999*	*2000*
Domestic Tourist (million)	0.7	1.1	1.6	0.9	1.0	1.2
Foreign Tourist (million)	0.1	1.7	2.3	0.1	0.1	1.6

Sources: Unit Perancang Ekonomi Negeri Terengganu, 2001

Impacts of Tourism

In order to develop and manage tourism industry successfully in the country, consideration of economic, environmental and socio-cultural impacts must be well

understood. The concept of sustainable development will be achieved if economic, environmental and socio-cultural impact are weighed together.

Economic Impacts

Possible economic impacts of tourism are:

(a) Income generated and its contribution to Gross National or Domestic Product

(b) Foreign exchange from international tourism

(c) Generation of local employment through direct and indirect employment

(d) As a catalyst for other economic activities using tourist expenditure

(e) Contribution to government revenues e.g. airport departure taxes

Tourism will generate some economic problems if not properly controlled. High imports on goods and services used in tourism and tourist facilities owned and managed by outsiders will cause economic losses. To enhance the economic benefits of tourism, linkages between tourism and other economic sectors should be strengthened. It can be achieved through the reduction in import content of tourism and by using more employment of local resources. Tourist expenditure and tourist activities also will enhance economic benefits. Tourist expenditure will be increased through the provision of more shopping opportunities especially local crafts and arts. Expansion in tourist activities such as organising more attraction and tours will influence tourists to stay longer.

Environmental Impacts

Tourism can generate both positive and negative impacts to the environment. The relationship of tourism and environment is one of inter-dependence because the environment provides resources which form the major attraction for tourists. And a sustainable tourism will enhance environmental protection.

Positive environmental impacts can be generated if tourism is well planned, developed and managed. These positive impacts include:

(a) conservation of wildlife and natural areas including marine environments, national parks and reserved parks

(b) conservation of archaeological and historic sites

(c) improvement of environmental quality

Without proper planning, development and management, tourism can generate negative environmental impacts such as:

(a) water pollution e.g. sewage and solid waste disposal for hotels

(b) air pollution e.g. cars and buses

(c) noise pollution

(d) visual pollution e.g. poorly designed hotels and other tourist facilities

(e) waste disposal problems by tourist e.g. littering

(f) overuse and misuse of natural areas by tourist which will affect ecological discruption.

Socio-cultural Impacts

Tourism can bring both benefits and problems to the local societies. These impacts can be critical especially in the country where the traditional culture holds strongly.

Positive socio-cultural impacts from well planned, developed and managed tourism are:

(a) improvement of living standards of people

(b) conservation of the cultural heritage