



**UNIVERSITI PUTRA MALAYSIA**

**ECONOMIC VALUATION OF THE NATURE TOURISM AREA OF  
PULAU REDANG MARINE PARK, TERENGGANU, MALAYSIA**

**MOHD PARID BIN MAMAT**

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REDANG MARINE PARK, TERENGGANU, MALAYSIA**



**By**

**MOHD PARID BIN MAMAT**

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,  
in Fulfillment of the Requirements for the Degree of Master of Science**

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I certify that an Examination Committee has met on 3 November 2010 to conduct the final examination of Mohd Parid bin Mamat on his thesis entitled “Economic Valuation of the Nature Tourism Area of Pulau Redang Marine Park, Terengganu, Malaysia” in accordance with the Universities and University College Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The committee recommends that the student be awarded the Master of Science.

Members of the Thesis Examination Committee were as follows:

**Shukri Mohamed, PhD**  
Associate Professor  
Faculty of Forestry  
Universiti Putra Malaysia  
(Chairman)

**Mohd Shahwahid Othman, PhD**  
Professor  
Graduate School of Management  
Universiti Putra Malaysia  
(Internal Examiner)

**Rusli Mohd, PhD**  
Associate Professor  
Faculty of Forestry  
Universiti Putra Malaysia  
(Internal Examiner)

**Jamal Othman, PhD**  
Professor  
Universiti Kebangsaan Malaysia  
(External Examiner)

---

**SHAMSUDDIN SULAIMAN, PhD**  
Professor and Deputy Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date: 18 January 2011

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee were as follows:

**Awang Noor Abd. Ghani, PhD**

Professor  
Faculty of Forestry  
Universiti Putra Malaysia  
(Chairman)

**Khamurudin Mohd. Noor, PhD**

Lecturer  
Faculty of Forestry  
Universiti Putra Malaysia  
(Member)

**Ahmad Shuib, PhD**

Professor  
Faculty of Economics and Business  
Universiti Malaysia Sarawak  
(Member)

---

**HASANAH MOHD. GHAZALI, PhD**

Professor and Dean  
School of Graduate Studies  
Universiti Putra Malaysia

Date:

## DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.

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**(MOHD PARID MAMAT)**

Date: 3 November 2010

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the Degree of Master of Science

**ECONOMIC VALUATION OF THE NATURE TOURISM AREA OF PULAU REDANG MARINE PARK, TERENGGANU, MALAYSIA**

By

**MOHD PARID MAMAT**

**November 2010**

**Chairman : Professor Awang Noor Abd. Ghani, PhD**

**Faculty : Forestry**

Natural areas as recreational sites are increasingly recognized as important assets in conserving natural resources and generating economic growth via ecotourism development. The demand for tourism related to nature is quite substantial and is fast expanding. To cope with the increasing demand for ecotourism in Malaysia, the authorities need to provide adequate and high quality infrastructures. Decision-makers face difficulties in allocating scarce resources among competing uses. For recreational resources, it is not easy to obtain their monetary values because recreational experiences are not traded in the competitive market. Hence, with economic valuation of recreational resources that planners could rely on, more rational decisions or policies can be made for efficient management of resources.



The purpose of the thesis is to estimate the values of Pulau Redang Marine Park (PRMP) in Malaysia, through users' willingness to pay (WTP) and examine the perceptions and attributes of visitors' satisfaction with the recreation facilities and services provided at PRMP. This study also evaluates the relationship between visitors' characteristics and attributes of PRMP. In this study, the contingent-valuation method (CVM) was employed to estimate the economic value of conserving the marine park using the face-to-face interview technique. The WTP was elicited from a total of 308 respondents. The respondents were asked whether they would be willing to contribute a conservation fee to preserve PRMP as a recreational site. The average WTP for all respondents was estimated to range between RM10.86 and RM28.69 per visit. Using the total number of visitors to PRMP in 2008, a contribution of between RM1.6 million and RM4.3 million in aggregate was derived for the same year. In addition, there are the differences between the mean and median WTP for different models and also between foreign and local respondents. In all models, except for the log-normal model, the mean WTP values for foreign respondents are higher than the mean given by local respondents. The differences between the foreign and local WTP are larger with the mean WTP for foreign respondents being RM19.33 compared with that for local respondents of RM8.25 for the logistic model. In the log-logistic model the mean WTP for foreign respondents was RM13.12, while that for local respondents was RM10.73. For linear models, OLS and the Tobit, the

mean WTP values for foreign respondents were RM12.59 and RM12.72, while the local respondents give RM7.06 and RM7.15 respectively.

In recreation, visitors' level of satisfaction with the facilities and services provided is also important in long-term ecotourism development. Most visitors to PRMP found the recreation facilities at a less satisfactory level. This is indicated by an average index of 1.55 for the recreation facilities evaluated which is below the intensity discrete value of 2.5 for positive perceptions. The visitors perceived the services provided at PRMP to be satisfactory with an average index of services of 2.77. The results also showed an overall perception index of 2.16. This means that the visitors who came and enjoyed PRMP were generally less satisfied with the recreational facilities provided.

The study also showed that a total of six satisfaction attributes were significant predictors of overall satisfaction, accounting for 59 percent of the variance associated with overall satisfaction. This is a high amount of variance for a satisfaction model in the field of outdoor recreation. Of all the satisfaction attributes, efficiency of services, signs and directions/sign postings, locations of the facilities: convenience/setting, and freedom from obstruction by buildings/being in a natural place proved to be the best predictors of overall satisfaction. This shows that the management of PRMP should look at these items within specific recreation areas to ensure that they are meeting the visitors'

expectations. Perfecting these satisfaction attributes could help increase visitors' overall experience, which could lead to repetition visits.

The study also gathered information about the visitors' perceptions, their expectations about the park and their assessments of its importance. They were asked to state their levels of satisfaction in terms of how they regard the destination by listing their own values. The majority of the respondents viewed the park as very valuable as a site for participating in recreational activities, with an average mean score of 4.00. Conservation was also important, as indicated by an average mean score of 3.83 for the conservation opportunities evaluated. The respondents agreed that PRMP should be conserved. The results are in line with the objective of establishing marine parks in Malaysia, i.e. to conserve and protect marine ecosystem and manage it for biodiversity research, educational purposes and the development of recreational and ecotourism activities that are sustainable.

On their experiences while visiting the park, most of the respondents showed positive perceptions, indicated by an average mean score of more than 3.00 for the question asked. Being able to participate in the activities provided and enjoying the experiences with friends or family were the most satisfying things that they got from their trips to PRMP. This was followed by the feeling that the trips allowed them to escape from their normal routines and experience

something new and different. That the trips allowed people to develop their own skills was the least important. On the visitors' expectations of the park, most (94.8%) of the visitors regarded PRMP as a suitable site for recreation. In terms of crowdedness, the majority (87%) of the respondents said that the park was crowded and 79.9% of the respondents agreed that the park was attractive.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia  
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**PENILAIAN EKONOMI KAWASAN PELANCONGAN SEMULAJADI  
TAMAN LAUT PULAU REDANG, TERENGGANU, MALAYSIA**

Oleh

**MOHD PARID MAMAT**

**November 2010**

**Pengerusi : Profesor Awang Noor Abd. Ghani, PhD**

**Fakulti : Perhutanan**

Persekitaran semula jadi sebagai kawasan rekreasi semakin dikenali dan penting. Malah, persekitaran ini merupakan aset dalam pemuliharaan sumber semula jadi di samping menyumbang terhadap pembangunan ekonomi melalui eko-pelancongan. Permintaan terhadap pelancongan yang berkaitan sumber semula jadi adalah tinggi dan semakin berkembang pesat. Bagi memenuhi permintaan ini di Malaysia, pihak berkuasa perlu memainkan peranan menyediakan kemudahan yang lengkap dan berkualiti. Namun demikian, persaingan terhadap kepenggunaan lain menyebabkan penggubal polisi menghadapi kesukaran dalam memperuntukkan sumber semula jadi sedia ada dan semakin berkurangan. Persekitaran semula jadi sebagai sumber rekreasi tidak mudah memperoleh nilai kewangannya kerana tidak diniagakan dalam pasaran. Oleh yang demikian, dengan membuat penilaian ekonomi terhadap

sumber ini, dapat memberikan maklumat kepada perancang agar keputusan dan polisi pengurusan dapat dibuat dengan lebih berkesan.

Tujuan kajian ini dijalankan adalah untuk menganggar nilai ekonomi Taman Laut Pulau Redang menggunakan konsep kesanggupan pengguna untuk membayar (Willingness to pay) dan mengenal pasti persepsi dan tahap kepuasan mereka terhadap kemudahan dan perkhidmatan rekreasi yang disediakan. Dalam kajian ini, kaedah penilaian "contingent" digunakan untuk menganggar nilai ekonomi terhadap pemuliharaan Taman Laut melalui teknik menemu duga pengguna secara bersemuka. Maklumat kesanggupan pengguna membayar diperoleh daripada sejumlah 308 responden. Responden ditemu duga untuk mendapatkan maklumat samada mereka sanggup membayar sejumlah wang untuk tujuan pemuliharaan taman laut sebagai tempat rekreasi. Dianggarkan purata pengguna sanggup membayar adalah antara RM10.86 hingga RM28.69 untuk setiap lawatan. Dengan nilai purata tersebut dan mengambil kira jumlah kedatangan pelawat ke Taman Laut Pulau Redang untuk tahun 2008, dianggarkan nilai ekonominya di antara RM1.6 juta hingga RM4.3 juta setahun. Terdapat perbezaan purata pengguna sanggup membayar antara model yang diguna pakai dan antara responden luar negara dan tempatan. Anggaran nilai purata pengguna sanggup membayar menggunakan model *logistic* bagi responden luar negara adalah RM19.33 berbanding hanya RM8.25 bagi responden tempatan. Bagi model *log-logistic* pula, anggaran nilai puratanya adalah RM13.12 bagi responden luar negara dan hanya RM10.73 bagi responden tempatan. Anggaran nilai purata pengguna sanggup membayar

menggunakan model *linear* iaitu OLS dan Tobit, puratanya adalah RM12.59 dan RM12.72 masing-masing bagi responden luar negara, manakala hanya RM7.06 dan RM7.15 bagi responden tempatan.

Dalam pembangunan jangka panjang ekopelancongan, tahap kepuasan pelawat atau pengguna terhadap kemudahan dan perkhidmatan rekreasi yang disediakan adalah penting. Daripada analisis yang dijalankan, didapati kebanyakan pelawat yang datang ke Taman Laut Pulau Redang tidak berpuas hati dengan kemudahan rekreasi yang disediakan. Ini ditunjukkan dengan purata indeks persepsinya 1.55, lebih rendah daripada purata indeks positifnya iaitu 2.50. Manakala bagi perkhidmatan yang disediakan, purata indeksnya adalah 2.77, menunjukkan pengguna berpuas hati dengan perkhidmatan yang disediakan. Purata keseluruhan indeks persepsi pengguna terhadap kemudahan dan perkhidmatan rekreasi yang disediakan adalah 2.16. Ini menunjukkan secara umumnya, pengguna yang datang ke Taman Laut Pulau Redang tidak berpuas hati dengan kemudahan dan perkhidmatan rekreasi yang disediakan.

Kajian ini juga menunjukkan sebanyak enam atribut kepuasan signifikan sebagai prediktor kepada kepuasan keseluruhan pelawat ke Taman Laut Pulau Redang, perakuan untuk 59 peratus daripada varian yang berkaitan dengan kepuasan secara keseluruhan. Ini merupakan jumlah varian yang tinggi untuk model kepuasan dalam bidang rekreasi. Daripada semua atribut kepuasan, kecekapan perkhidmatan, penyediaan tanda arah yang tepat, kedudukan kemudahan yang memberi keselesaan kepada pelawat, dan pelawat dapat

berada di persekitaran semula jadi merupakan prediktor terbaik kepada kepuasan keseluruhan pelawat. Ini menunjukkan bahawa perancang dan pengurus taman harus menitikberatkan perkara ini dalam membuat perancangan dan pengurusan bagi memastikan kemudahan dan perkhidmatan yang disediakan memenuhi keperluan pelawat. Penyediaan kemudahan dan perkhidmatan yang memenuhi kehendak pelawat dapat membantu meningkatkan pengalaman dan kepuasan pelawat yang menyumbang kepada pengulangan kunjungan.

Kajian ini juga mengumpul maklumat mengenai persepsi pelawat mengenai harapan dan kepentingan Taman Laut Pulau Redang kepada diri mereka sendiri. Pelawat diminta untuk menyatakan tahap kepuasan dalam hal tujuan yang berharga bagi diri mereka dengan menyatakan nilai mereka sendiri. Daripada hasil kajian, majoriti responden mengatakan bahawa Taman Laut Pulau Redang sangat bernilai sebagai destinasi lawatan untuk menyertai pelbagai aktiviti rekreasi dengan skor adalah 4.00. Elemen pembangunan pemuliharaan juga penting dengan purata skor 3.83. Responden bersetuju bahawa Taman Laut Pulau Redang harus dipulihara. Hasil kajian ini adalah selari dengan objektif penubuhan taman laut di peringkat nasional iaitu untuk memulihara dan melindungi ekosistem marin untuk tujuan penyelidikan biodiversiti, pendidikan dan pembangunan sumber bagi tujuan rekreasi dan ekopelancongan.



Selanjutnya, mengenai pengalaman pelawat ketika berkunjung ke Taman Laut Pulau Redang. Majoriti pelawat memberikan persepsi positif dengan purata skor melebihi 3.00. Purata skor paling tinggi, iaitu 3.93, yang mana pelawat mengatakan bahawa melalui kunjungan ke Taman Laut Pulau Redang dapat mendekatkan hubungan antara keluarga atau kawan. Di ikuti dengan skor kedua tertinggi, iaitu 3.92, pelawat mengatakan bahawa melalui kunjungan dan penglibatan dalam aktiviti rekreasi di Taman Laut Pulau Redang dapat melupakan seketika aktiviti yang menjadi rutin harian mereka. Purata skor ketiga tertinggi, iaitu 3.72, pelawat mengatakan bahawa kunjungan dan penglibatan dalam aktiviti memberikan suatu pengalaman baru. Manakala, purata skor terendah, iaitu 3.22, merujuk kepada kunjungan ke taman laut dapat meningkatkan kemahiran diri. Secara keseluruhan, 94.8% daripada pelawat mengatakan bahawa Taman Laut Pulau Redang adalah satu lokasi sesuai untuk aktiviti rekreasi, 87% mengatakan Taman Laut Pulau Redang agak sesak, dan 79.9% bersetuju Taman Laut Pulau Redang adalah satu lokasi ekopelancongan yang menarik.

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