STATED PREFERENCE TECHNIQUE FOR NATIONAL PARKS IN MALAYSIA

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ABSTRACT

National parks hold a great value for recreational resources or/and ecotourism destination. The economic valuation for non-marketed goods in ecotourism activities in Malaysia is still considered rare. This is important to minimize the indifference between the tourists' expectation and the level of management setting provided by the federal system of the government. The government which owns such areas needs to place money value to these goods. This paper aims to provide the importance of economic valuation as decision factors in the improvement of management plans of national parks in the country. It includes a discussion on the characteristics and capabilities of variety of methods used for this purpose.

Keywords: Economic Valuation, National Park, Stated Preference, Willingness-to-pay

INTRODUCTION

Malaysia is known to have a wide range of natural flora and fauna as it is situated in the tropical rainforest climate. The country's National Policy on Biological Diversity has the vision to "transform Malaysia into a world centre of excellence in conservation, research and utilization of tropical biological diversity by the year 2020" (MOSTE, 1998). Backhaus (2003) mentioned that tourists who appreciate natural environment do not interested visiting areas which covered with rainforests or a total jungle. They would be interested if the rainforests are protected and if the areas carry the label of either conservation, forest reserve or national park. This type of tourist activities often associated with the term ecotourism. Many researchers defined ecotourism in different viewpoint. However, Malaysia adopted the definition by International Union for Conservation of Nature (IUCN):

> *"..Environmentally responsible travel to relatively undisturbed natural areas in order to enjoy and appreciate nature (and any other accompanying cultural features). One that promotes conservation, one that has low*

visitor impact and one that provides for beneficially active socioeconomic involvement of local populations..” (IUCN, 1994).

Malaysia has no less than 20 gazetted national parks all over the country. The area covers 1,464 million hectares which is nearly 5% of the country’s area. Backhaus (2003) stated that Malaysia has a great potential in promoting nature tourism and ecotourism. National parks are established for the purpose of preservation, hence allowing and encouraging access for education, recreation and tourism purposes. There is no single authority responsible in decision making of environmental development of these natural areas (Hall, 1994). Malaysia which has a total land of 329,847 square kilometers is divided into two geographical regions, known as West Malaysia and East Malaysia. National parks in West Malaysia, also known as Peninsular Malaysia, are mainly managed by the Department of Wildlife and National Parks (DWNP). The East Malaysia consists of Sabah and Sarawak. In Sabah, these parks are managed by Sabah Parks, Sabah Wildlife Department, Sabah Forestry Department and Sabah Foundation. In the case of Sarawak, they are solely managed by the Sarawak Forestry Corporation.

This paper aims to provide the importance of economic valuation as decision factors in the improvement of management plans of national parks in the country.

Economic Valuation

Economic valuation refers to the measurement in terms of money values to non-marketed goods and services of natural resources. The literature normally categorise the value of natural resources into use value and non-use value. Use values may be direct, indirect or option value and the non-use values fall into two subcategories which are bequest value and existence value (Bateman & Turner, 1993). For the case of national park, the example of direct use values would be the recreational activities that are utilize by visitors. On the other hand, indirect use values refer to those associated with the ecological services such as the circulation of air and water purification. Option value is the potential use benefit. This can be viewed as the willingness-to-pay (WTP) for the preservation of natural resources in the national park that would be beneficial at later time by the generation. Non-use value, also referred to as passive use values, is then subcategorising into bequest and existence value. This is when individuals are willing to pay to maintain the existence of the good even though they make neither direct use nor plan to use it. Bequest value is the value that future generations will benefit from the resources. The situation that can explain the meaning of existence value is the awareness that the forests still exist and maintain which is unrelated to actual or potential use of it.

There are two techniques in estimating the economic values of non-marketed goods and services which are revealed preference (RP) and stated preference

(SP). Use value can be estimated by using both techniques, however non-use values can only be estimated by SP. RP is exercised when the preference of the individuals is revealed by their purchasing habit in the actual market, which is usually price-based. On the other hand, SP measures the demand of goods and services which do not have market price as they are not directly sold. This can be assessed by using individuals stated behavior in a hypothetical setting (Alpizar, Carlsson, & Martinsson, 2003). Normally, the survey would ask on how much money would individuals are WTP to enjoy the benefit of the goods and services. In the academic market of environmental valuation research (Adamowicz, 2004), the study applying the use of SP techniques appears to be increasing, however this does not imply that the research using RP techniques are declining.

Stated Preference Techniques

SP can be classified into contingent valuation (CV) and choice modeling (CM). In CV, respondents are asked to state how much they are willing to pay for the given good. They are asked about their maximum WTP (or minimum willingness to accept) in compensation for a predetermined increase or decrease in environmental quality (Mogas, Riera, & Bennett, 2005). Though this method is widely used, Diamond and Hausman (1994) criticized that the methodology for estimating non-use values is deeply flawed in terms of the estimates of the WTP and the reliability of the value. Blamey, Bennett, & Morrison (1999) mentioned that the possible explanation for the overestimation of values is the presence of yea-saying. This was shown in the increasing number of empirical studies revealed that dichotomous choice results seemed to have significantly larger than the open-ended values (Hanley, Mourato, & Wright, 2002).

CM has developed from conjoint analysis in the marketing and transport literature (Othman, Bennett, & Blamey, 2004). In CM, respondents are asked to choose their preferences in choice set which usually containing three or more alternative goods. The alternative to be chosen is a combination of several attributes. Each of this attribute has value, referred to as level. This allows for the identification of the trade-offs that individuals make between attributes (Mogas, Riera, & Bennett, 2006). By including price as one of the attributes of the good, WTP can be indirectly estimated. Schroeder & Louviere (1999) added that when price is included, it becomes possible to examine the impact of price changes on respondents' choices and to compare the impact of price changes with the impact of changes in other site attributes. In contrast to the single trade-off approach of CV, this technique allows for the simultaneous analysis of several influences on choice (Rolfe, Bennett, & Louviere, 2000).

CM has four different forms which are contingent rating, contingent ranking, paired comparisons and choice experiments. In contingent rating, respondents are presented with a number of scenarios and are asked to rate them individually on a numerical scale. The respondents in contingent ranking are asked to rank a set of alternative options, characterized by a number of attributes, which are offered at

different levels across options (Hanley et al., 2002). In paired comparison exercise, respondents need to choose their preferred alternative out of a set of two choices and to indicate the strength of their preference in a numeric scale (Hanley et al., 2002). Choice experiments originally have a long tradition in the field of transport and marketing. It was used to study the trade-offs between the characteristics of transport projects and private goods, and only recently it has been applied to non-marketed goods in environmental and health economics (Alpizar et al., 2003). The main purpose is to estimate the economic welfare effects in the changes in the levels that the attributes take (Bateman et al., 2004). It is also very useful in providing information of the utility that people attach to various environmental attributes which is beneficial to the decision-maker (Bullock, 2006)

Policy makers in developed countries have fully aware of the fact that it is important to consider economic valuation in the process of decision making. They have accepted that environmental goods can be measured by using various methods. However, in developing country like Malaysia, the valuation of environmental good is still regarded as unfamiliar. Though researches regarding this issue in Malaysia are found to be rare, the finding proved that our country also give values on environmental goods. The most common technique in researches done on the economic valuation of recreational area in Malaysia is the use of CV. Radam & Mansor (2005) studied the outdoor recreational resources in Manukan Island, Sabah and estimated the mean WTP to be RM5.02 of the entrance fee which is more than the current rate. The issue raised in the paper was to capture the benefits from ecotourism and using this revenue to improve and maintain the environmental management. Samdin (2008) found that the international visitors WTP was RM18.47 and the locals WTP was RM6.32 for the entrance fee to Taman Negara National Park (TNNP).

The use of CM is limited in publication. Othman, et al., (2004) did the study at Matang Mangrove Wetlands in Perak and proved that the CM can be applied in a developing country if the choice sets of attributes and field data collection are systematically monitored and constructed. By using nested logit model, non-user households WTP of RM12.70 per annum to achieve the alternative management scenario where this showed that CM has the advantage to evaluate both marginal values of the attributes and the welfare impact of the alternative management options. For the case of Redang Island Marine Park, Yacob (2006) applied the conditional logit and mixed logit models to investigate the visitors' preferences. The visitors are willing to pay more for better improvement of facilities and services, which should be improved from status-quo level. This finding is important to assist policy makers to ensure the visitors' wants and needs as well as their experience are in line with the commercial and technical perspectives of the management.

CONCLUSION

The use of economic valuation in the decision process regarding the development and management of national parks in Malaysia should be considered as a necessity for having efficient management actions. This may also contribute to the sustainability in the development of these national parks. It is reasonable for policy makers consider at least to review the entrance fee as one of the sources of funding. Several approaches can be applied for valuing non-market environmental goods and services as discussed in this paper. The method to be chosen has to be carefully selected depending on the objectives of the study as for academic purposes or the policy implementation or both. The other aspect that needs to be accounted for in choosing the methods used are the limitations of the application. Generally, CV is applied if the objective is to estimate the WTP in total. However, CM is useful choice if estimating WTP based on attributes provided. In the case of estimating the value of ecotourism in national park, CM has the potential advantages as to compare with CV. This is because visitors may have different level of wants in the attributes provided where CM has the capability of capturing this issue.

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