

## CONSERVATION OF DELTAIC MANGROVE FOREST RESOURCES IN KUCHING, SARAWAK: LOCAL COMMUNITIES' WILLINGNESS TO PAY

AHMAD SHUIB<sup>1</sup>, ANNA BON SIN YII<sup>2</sup> AND SALBIAH EDMAN<sup>2</sup>

<sup>1</sup>Institute of Agricultural and Food Policy Studies, Universiti Putra Malaysia, Putra Infoport, 43400 UPM, Serdang, Selangor, Malaysia.

<sup>2</sup>Department of Economics, Faculty of Economics and Business, Universiti Malaysia Sarawak, Kota Samarahan 94300, Sarawak, Malaysia.

Corresponding author: mad.shuib@gmail.com

**Abstract:** The mangrove forest resources in the Kuching Delta are being exploited extensively for agricultural, industrial and other development purposes despite conservation efforts being carried out. This study was aimed at determining the willingness to pay by the local communities for the conservation of the mangrove resources. Data were collected from the local communities living near the mangrove forests and the WTP was obtained by using the contingency valuation technique. 316 respondents were interviewed and asked to indicate the maximum amount they were willing to pay for the conservation of mangrove forest resources. The majority of the local community members were willing to pay for the conservation of the resources, with a mean value of RM15.70 per year per person. Conservation of the resources was perceived positively by the residents with a mean value of 3.9 (out of 5 rating scale). Levels of education and income of the local communities have positive influence on the willingness to pay for conservation of the resources. Mangrove forest benefits could be obtained in perpetuity if conserved; the estimated gross present value of the benefits (WTP) is RM28.3 million, at the annual social discount rate of 4 %.

**Key words:** mangrove ecosystem, non-use values, river delta, market value, attitudes, discrete choice model, multistage sampling, gross present value

### INTRODUCTION

Mangrove forest is one of the productive and valuable ecosystems on earth because it is made up of both living and non-living environment (Qamar 2009). This unique forest ecosystem is generally found between dry land and shallow marine and brackish water (Wilson 2006). Mangrove forest does not have a complex biodiversity as many other forest ecosystems due to the harsh and constantly changing environment. Nonetheless it is widely recognized as a provider of a great variety of goods and services to benefit people (UNEP 2003).

The goods and services provided include natural habitat and food supply for many important marine life species (Cabrera et al. 1998). Apart from that, it is also a source of a variety of products such as mangrove timber used for charcoal and pole, and wood resource for medicine. Besides, it provides storm protection, shore stabilization, and control of coastal soil erosion (Sathirathai & Barbier 2001). It also protects tidal flooding and salt intrusion into neighbouring areas, and protects beaches and corals from siltation. They also have non-use values such as cultural,