

## VALUATION OF PROPERTY DAMAGES FROM URBAN AIR POLLUTION: A CASE STUDY OF COLOMBO, SRI LANKA

B.M.S Batagoda<sup>1</sup> and Geetha Parameshwaran<sup>2</sup>

<sup>1</sup>Consultant, CF Assist Programme, The World Bank

<sup>2</sup>Central Environmental Authority

### Abstract

Air is the life of all living creatures. Due to industrialisation and urbanisation air is becoming a medium of waste disposal which exceeds the natural dispersal capacity of the atmosphere and the result of which is air quality deterioration. The consequences of poor air quality are serious. It directly affects human health, destruct agriculture and livestock and damage properties, buildings, structures, historical monuments. Traditionally, ecological and biological services of air have not been valued and priced since they are not marketed. However, now it is widely recognised the need for valuing ecological and biological services of air resources in monetary terms and estimate the cost of deteriorated air quality in order to formulate prudent air quality management policies. A number of studies have estimated health costs and cost of crop damage due to air pollution. No study has attempted to estimate the economic costs of property damage due to air pollution in Sri Lanka.

This objective of this study is to evaluate the cost of property damage due to urban air pollution in Colombo in Sri Lanka. The study used the contingent valuation method. Both open ended and payment card method was used to collect the information on the willingness to pay (WTP) of the people to avoid property damages cost due to urban air pollution. The study also investigated the socio economic conditions, the risk, perception and avoidance behaviour of respondents and their willingness to pay for the improvement of air quality. The WTP data

were analysed using logit regression model. The chi square technique was used to study the difference between the WTP of the respondents from the badly affected area and those from less affected areas. The study estimated the average property damage due to urban air pollution in Colombo at Rs.12677 (US\$ 126) per household per year. This study also estimated the average WTP to avoid property damage from urban air pollution at Rs.520 (US\$ 52) per household per year. The WTP for a Air Quality Improvement Fund, if established, was found to be Rs.1546 (US\$154) per household per year.