Effective use of available transport data to improve vehicle emission inventory for Sri Lanka

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At present estimation of vehicle emissions in Sri Lanka is done based on aggregate vehicle type or the total fuel sales. A detailed vehicle emission inventory that takes into account the time and spatial distribution of vehicle flow will be helpful to take actions to reduce air pollution, noise and other adverse environmental impacts of road transport.

This paper describes a method to improve the accuracy of the estimation of mobile source emissions in Sri Lanka. The proposed method is capable of estimating vehicle emissions based on the vehicle flow distribution within the country with respect to location and time of the day and emission factors that will be available to date. To estimate the mobile source emissions, the study area is divided into a zone system that could incorporate the divisional secretariat divisions' administrative boundaries.

Transport Planning Model (TransPlan) developed by University of Moratuwa, is used to estimate vehicle flows along National roads in Sri Lanka. Manual Classified Traffic Count data available (MCC) is used to estimate daily vehicle distributions with time. Vehicle registration statistics, which is published by the Department of Motor Traffic, is used to evaluate vehicle classification by fuel type.

A program is written to combine all the above data to develop an efficient vehicle emission inventory that is capable of incorporating future improvements.

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