Environment and Climate Change

Emissions and Health

The pollutants emitted and their quantities depend largely on the quality of fuel used, vehicle technology and its maintenance.

These pollutants have a major impact on public health. NOx, for example, can cause nervous disorder. Lead particulate, can result in detrimental physiological disorders such as interference with IQ of children of school age, gastrointestinal disorder, nausea, circulatory collapse, fatigue, blindness, CNS disorder, and anemia. Of the highest concern are fine particles called PM10 (particles less then 10 microns in size) which affect the respiratory system and can cause diseases like asthma and lung cancer. In addition they can cause premature mortality and morbidity. Gases such as nitrogen oxides and volatile organic compounds react in the presence of sunlight to form ground level ozone, which poses risk to human health.

Mortality from air pollution in urban areas has been estimated at more than 50,000 deaths per year in developing countries (World Bank 2002). Countries in East Asia and the Pacific, South Asia and Sub-Saharan Africa have the highest incidences of diseases caused by air pollution. The air pollution is principally attributable to the transport sector (World Bank 2006). Air pollution mostly affects the poor and the vulnerable who have a higher level of exposure especially those living in the road environment.

Vehicles also emit green house gases like carbon dioxide and methane. IPCC (2007) estimates placed the contribution of the transport sector to the total greenhouse gas emission at 23% of the annual total in 2004. ADB (2006) estimated that developing countries in Asia led by China and India would make their maximum contribution to carbon dioxide emissions by the year 2030.

Containing vehicular pollution in order to stop deterioration of local air quality and containing greenhouse gas emissions in order to mitigate climate change should become a national priority for all countries.

Key Documents:

- Adverse Health & Environmental Effects from Vehicle Emissions, ADB, 2003
- Transport Planning and Traffic Management for Better Air Quality, ADB 2003
- If Health Matters - Integrating Public Health Objectives in Transportation Planning, T Litman, Victoria Transport Policy Inst 2010

Key presentations:

- Mobile Sources and Air Quality In Africa, BAQ AFRICA Conference, 2006

For further information
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