

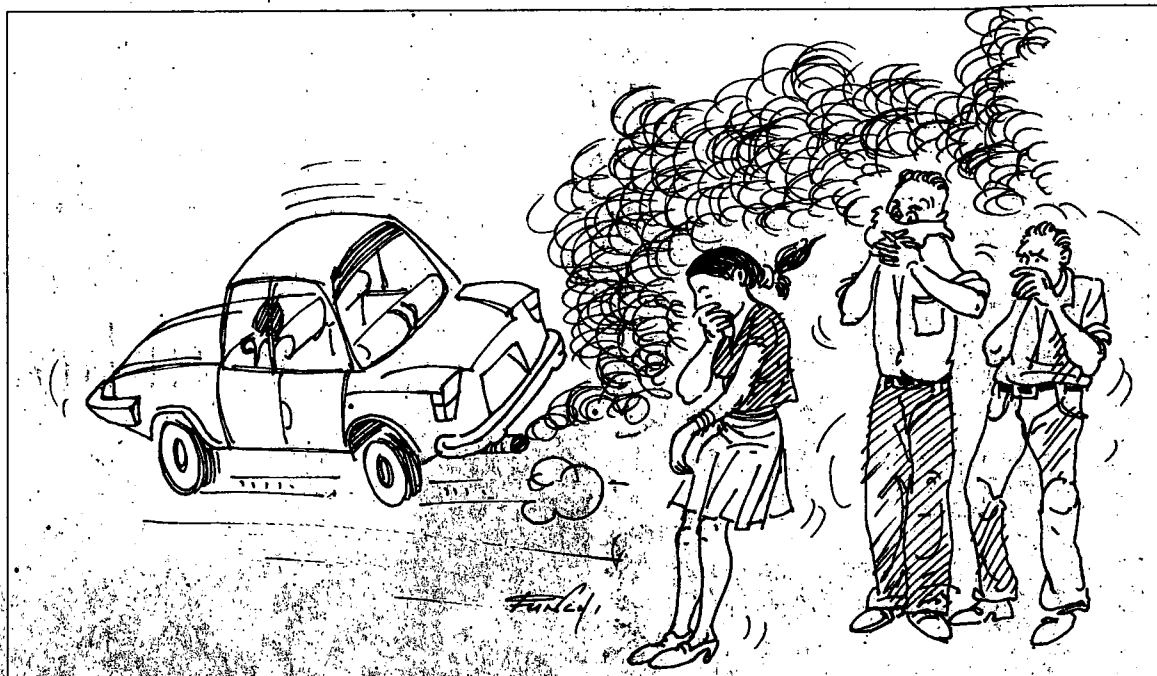
# Social effects of air pollution in Colombo

A study by the Public Interest Law Foundation

A recent study of air pollution in the city of Colombo reveals that the poorer you are, the more likely you will be to suffer from respiratory disease as a result of it. Establishing a clear correlation between the occurrence of respiratory disease and the amount of time a person spends on the road each day, the study says "if one cannot afford the luxury of an air conditioned vehicle, one's exposure to air pollution and its harmful effects will be quite high". Those who travel by foot, bus, trishaw or motorcycle, are the worst affected. This study conducted by the Public Interest Law Foundation is the first of its kind.

There are multiple causes for the deterioration of air quality in the city of Colombo. However, vehicular emissions are the major cause of air pollution at present and just like many of the large cities in other developing countries of Asia, Colombo also faces the major problem of traffic congestion. The pollution caused by vehicle emissions is often exacerbated in cities such as Colombo due to the lack of vehicle maintenance. Although vehicle emission standards are now in place in Sri Lanka the implementation of these regulations is not easy. If vehicular pollution is to be minimized vehicles which exceed emission standards and go around belching large quantities of black smoke in their wake need to be taken off the roads completely. However, it is unfortunate that at present if this were to be done in Colombo a large percentage of the public transport would have to go off the road.

This would cause total chaos in the city and therefore although emission standards have already been gazetted it is not possible to enforce this immediately and at present the policy on this matter is to phase the implementation into several segments over a period of time. It is also important to note



## How the study was done

The study, conducted over one year period, included collection and analysis of both secondary and primary data. Secondary data consisted of a literature survey on the subject, examination of relevant medical statistics etc. while the primary data came from actual field surveys that were conducted as part of the project. After an initial pilot survey phase carried out over a short duration of time a more comprehensive detailed survey was carried out within the city. Around 500 people who live/work in the city of Colombo were interviewed and the survey was carried out at eight selected sites within the city. The total sample was divided into five categories. These categories included commuters (people on the road such as school children, trishaw drivers, other vehicle drivers both A/C and non A/C, shoppers etc.), roadside shop workers (A/C and no A/C shops), pavement hawkers, slum dwellers and traffic policemen. A gender balance was maintained within categories and a percentage of school children were included in the sample.

that in Sri Lanka most popular passenger transport vehicles (buses, trishaws, school and office transport vans) as well as vehicles used in the transport of goods (truck, lorries etc.) are fuelled by diesel. These diesel vehicles are the cause of most of the emissions that cause air pollution. Severe congestion on the roads during peak traffic times is another reason for excessive air pollution. The present road network is inadequate to handle the volume of rush hour traffic resulting in several bottlenecks on all the major trunk routes into the city. This results in slowing down the flow of traffic which in turn leads to more emissions and pollution. Likewise, the lack of proper road repair and maintenance also adds to the problem of traffic congestion.

From the data collected thus far through the present study some salient factors are becoming obvious. For instance, there is a clear correlation between the occurrence of respiratory diseases and the amount of time a person spends on the road each day. The mode of transport used by a person also has an effect on his/her level of exposure to air pollution. For instance it is evident that a person travelling in an air conditioned car is protected from air pollution to a much greater

extent than a person who travels by trishaw, motorcycle, bus or foot. The ability to choose between available transport is a factor dependent on a person's economic status and therefore the burden of the impact of air pollution is related to those circumstances. Simply put, if one cannot afford the luxury of an air-conditioned vehicle, one's exposure to air pollution and its harmful effects will be quite high.

School children are also exposed to air pollution depending on the mode of transport they use and how far they travel. It should however be mentioned that school children always commute to and from school during the peak traffic times of the day. As a result there is more congestion on the roads at the times when they are exposed and the air quality would be at its worst. They also have to spend longer periods on the road due to traffic jams.

Another interesting factor that came out of the study is that people such as pavement hawkers, roadside shop workers and slum dwellers pointed out that the unpleasant odour of garbage that piles up on or beside the roads and drains that are blocked and never cleaned are sources of air pollution.

These are factors that are often overlooked in technical studies of air

pollution. But these are harsh realities that people who spend a lot of time on or near the road have to face on a daily basis. This therefore is a related environmental problem that needs to be taken note of and addressed.

Another alarming factor is that some of the people who are most affected by air pollution due to reasons such as long-term occupational exposure seem to be the people who are least aware of it. For example people like pavement hawkers, trishaw drivers and roadside shanty dwellers spend a large part of each day on or near the road.

Their level of exposure to air pollution is thus much higher than an office worker who is exposed only during the time when he/she is commuting to and from work. Here again people who live and work in the city spend less time on the road per day than those who commute from the suburbs on a daily basis.

The level of awareness on exposure to air pollution and the detrimental effects it can have on factors such as health and productivity was found to be low among people such as pavement hawkers and slum dwellers while they just accept it as a normal part of life.

However, categories such as traffic

policemen who are also exposed largely as a result of their occupation were more aware of the problems such exposure could cause although they too were generally reluctant or did not consider it a priority to do anything about protecting themselves. Many people interviewed during the survey complained of ailments other than respiratory diseases - pointing to air pollution as the culprit. One such common complaint attributed to air pollution was eye irritation. There could well be other cumulative effects of long-term exposure which lead to serious health effects such as lung cancer, increased blood lead levels, chronic asthma in people who are exposed to large quantities of air pollutants over extended periods of time. However, these would not be recorded as having been caused by air pollution if no long-term monitoring or research studies are carried out on the categories of people that are exposed and affected in this manner.

Air pollution was chosen as one of four topics in this project. It is one clear example of the disproportionate burden of environmental factors on different segments of society.

The results indicate that such effects can depend on socio-economic factors such as livelihood, location of home, occupation and living standards.

What the results show is that pollution can affect different segments of society in varying degrees and levels. However, as in the example of the correlation between mode of transport used and exposure to air pollution economic factors often have a bearing on the level of exposure and therefore, the burden of air pollution is disproportionately distributed among people of different economic levels.

A person who can afford to travel in an air-conditioned vehicle or work in an air-conditioned office is largely protected from the adverse effects of air pollution in the city of Colombo while those using other forms of transport and spending large amounts of time on the road due to their occupation are largely exposed to its detrimental effects.

These social aspects of air pollution have so far not been looked into and as a result they have not been recognized as a specific problem.

Today vehicle emission standards have been developed and implemented in order to address the technical aspects.

But the social aspects have not been studied or recognized, they have certainly not been addressed in any way at present.

Therefore, it is hoped that the results of this study will help to focus the necessary attention on this aspect of the problem and these issues will be addressed in the near future.