

## URBAN POLLUTION

### Dhaka Traffic : Impact on Environment

by Karar Mahmudul Hassan

STATISTICS reveal (Dhaka-Past, Present and Future) that within four years of the partition of 1947, the population of the capital city rose to 3,36,000 in 1951, and just after one decade in 1961, it further rose to 5,50,000. In 1974 (the year of famine), the population of the capital city was 16,80,000. In 1981, 1984 and 1989, the population further increased to 34,40,000, 42,00,000 and 50,00,000 respectively. As of now (1995), the Dhaka city's population is estimated to be between 86,00,000 to 88,00,000 approximately.

It is a matter of debate as to whether the population increase at so high rate in the capital city, did take place due to normal or natural reasons. Due to continuous deteriorating economic condition of the rural people, coupled with simultaneous regular land-loss caused by river erosion and other natural calamities etc., a large number of adversely affected rural people mainly of southern and coastal districts, has compelled their easy (!) access to the city of neon lights and skyscrapers during last one and a half decade, at times with bag and baggage plus family members, and sometimes with only baggages minus family members.

Consequently, the population increase in the capital city is going unabated, slums are on the increase, parts of roads and road-sides, foot-paths, playgrounds, parks including vacant places of government and semi-government staff quarters, public places, stadiums, Railway stations etc., are being illegally occupied at times, out of compulsion by these rural helpless 'migrants'. And in this process, the surrounding environment vis-a-vis sanitation plus related social conditions are being adversely polluted very fast, which are harmful to them and others as well.

As per statistics available with Dhaka City Corporation

(DCC), there are 436.36 km bigger roads, 1207.38 km medium size secondary roads, and 323.75 km lanes and by lanes in the city. Till the end of 1993, mechanical (fuel-driven) transports movements were somehow manageable and largely comfortable also. But traffic-jam; particularly from 8 am to 4 pm started taking serious and complicated shape since early 1994. During 1992 and 1993, on could reach to Motijheel C/A or Bangladesh Secretariat from Kamal Ataturk Road, Banani within 20-25 minutes by mechanised vehicles (cars, jeeps, buses etc.), but now it is almost impossible to cover this distance in less than one hour to one-and-a-half hours. The journey by mechanised vehicles from Gulistan to Sadarghat, Islampur, Patuatiully via Nawabpur Road or North South Road during 9 am to 9 pm, is a 'dreadful' experience for many and everyday. Thousands of Rickshaws (number of which is increasing round the clock), manually driven push-carts etc., are regularly creating transport hazards every moment and at every point. As a result, to cover two kilometres road by Rickshaw, minimum one hour is being spoiled by the concerned persons/passengers.

At present, in the city, acute population pressure, serious shortage of public facilities, and in addition, specially emission of hazardous blacksmoke from different vehicles viz. different gashes and particulates, are considered as the major causes of environment pollution. Depending on the types of fuel engines as well as the combustion process of petrol and diesel-run vehicles nature and quantity of emitted different particulates are different. Carbon monoxide, hydrocarbon and particulate of lead are mainly emitted from petrol-run vehicles. Whereas, oxides of nitrogen, high quantities of particulate matter containing carbon partic-

ulates, are discharged from diesel-run vehicles and due to this reason, heavy amount of blacksmoke are emitted from this type of vehicles. Oxides of sulphur, specially, sulphur dioxides are emitted from both type of vehicles.

But the amount is higher in diesel-run vehicles. In different increasing stages of sulphur dioxide in the air, it causes uneasiness, irritation in eyes, noses and throats of human beings. It develops different symptoms of diseases in the respiratory systems, chests and throat and in many cases, it causes even deaths to the affected people. In case of petrol engines, if there is shortage of required amount of air, then the desired pressure and heat will not be developed. For this reason, incomplete combustion takes place and then carbon monoxide and hydrocarbon comes out of the engines.

Out of emitted hydrocarbons in the air, two-third comes out from the vehicles.

In general, out of total amount of hydrocarbons in the air, about 80 per cent come from the urban industrial areas. In diesel engines, huge amount of pressure and heat are developed and during combustion, much more air is also needed. It helps developing full combustion. But because of procurement of heavy amount of heat, oxides of nitrogen come out and side by side, due to high temperature, carbon monoxide and carbon dioxide gases convert into carbon particles, which then come out through emitted blacksmoke. In petrol driven engines, there exists additional problem due to use of lead mixed fuel. But diesel is not mixed with terra ethyl lead (TEL), which is the source of lead. Out of total carbon monoxide and hydrocarbons in the air, 80 per cent and 65 per cent respectively come out from the vehicles.

Recently, Department of Environment, an organisation

of the Government of Bangladesh conducted a survey in Dhaka city (Source : Department of Environment Survey Report; 1990) on the usage of diesel, petrol and octane in motor vehicles. It was found that daily on an average, 100 kgs of lead, 3.5 tonne of other particulate matter, 1.5 tonne of sulphur dioxide, 16 tonne of oxides of nitrogen, 14 tonne of hydrocarbon and 60 tonne of carbon monoxide were coming out in the air. From this calculation, it was also found that, 80 per cent oxides of nitrogen, 97 per cent sulphur dioxide and 94 per cent particulate matter were coming out from diesel-run vehicles. Whereas, 100 per cent lead, 89 per cent carbon monoxide and 76 per cent hydrocarbons were coming out from petrol-run vehicles. According to the experts of the Department of Environment, petrol-run vehicles are more harmful than diesel ones for safety of health of all concerned.

Carbon monoxide is a toxic gas. Mixing with haemoglobin, it reduces the carrying capacity of oxygen in the blood and in many ways it damages the purification capacity in the blood. If it exceeds its particular limit, it causes death to man and animals. It even stands in the way of natural growth of plants and fixation of nitrogen which is important for production.

Experts opined that out of oxides of nitrogen, nitrogen dioxide's harmful reaction can swell up the lungs oedema i.e. storage of water in the lungs can cause even death. It is also harmful for the plants. Its higher amount in the vapour causes perverse reaction and then forms nitric acid. It can also cause acid rain which is very harmful for different elements of the environment.

In the emitted smokes of cars, motor vehicles etc., there exists sulphur dioxide which through mixing with air can cause uneasiness to all

kinds living beings. For this reason, irritation takes place in the eyes, noses and throats. In the respiratory systems, chests and throats, different types of diseases can be developed. It disturbs the respiration process. Amount of carbon monoxide emission from old cars/vehicles is much more higher. Three pounds of carbon monoxides are developed if one gallon of gasoline is burnt.

Besides all other kinds of environment related complication, serious and hygienically adverse impacts on the life of people, animals, plants and all other living organisms due to the petrol, octane and diesel driven vehicles' blacksmokes, only a partial picture has been narrated in the preceding paragraphs. This is one side of the scenario. On the other, the rate of increase of rickshaws, new and old as well, in this city every day and even every hour, is so alarmingly high that it is apprehended that the movements of people through vehicles either mechanised or otherwise, may be disturbed hours after hours causing immense harassments and millions of

hour-loss to the people of different professions including students' community etc'. Many patients of serious nature being victims of traffic hazards without getting the opportunity of reaching to the hospitals or clinics, are leaving the world without any medical aid. This is a horrible situation! Newspaper reports quoting a seminar deliberations on traffic hazards, stated that 300,000 litre fuel equivalent to Tk 40 million is wasted every month on DCC streets for traffic jam and the yearly wastage is around Tk 480 million. The loss is on the increase every day.

Time is fast moving out and it is high time for each of the citizens, either public or private, to immediately come forward and address this complicated problem absolutely from nonpolitical angle, suggest pragmatic and effective steps for solving or at least mitigating it to the extent of 50 per cent, if not more. The functions and responsibility of the government will be to implement the pragmatic suggestions on priority basis.

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The congested Dhaka streets: And in a mixed-traffic automobile fume emission is more than normal.



— Star photos

## Global Warming

IPS reports from Washington

THIRD world countries are more susceptible to the effects of global warming, say scientists assembled by the United Nations to examine the impact of carbon dioxide and other emissions on climate conditions.

"The actual impact is somewhat lower than we expected in 1990," according to Robert Watson, the co-chair of a working group of the Inter-governmental Panel on Climate Change (IPCC). But according to Watson, a report the scientists released recently also shows that "the developing world is more vulnerable than the developed world" to the effects of climate change.

Some 500 scientists collaborated on the report and 800 others checked the findings, making it the third study by the IPCC. The others, issued in 1990 and 1992, prompted governments to sign an international convention to prevent climate change at the 1992 Earth Summit in Brazil.

The scientists say that if greenhouse gases continue at current levels, with no increase, temperatures over the next century will rise about one degree Celsius, which is less than the 1992 projection of 1.5 degrees.

On the other hand, if emissions of greenhouse gases continue to expand at current rates, the world could warm up by as much as another 3.5 degrees Celsius in the next century — less

than earlier projections of 4.5 degrees Celsius.

"We have a better understanding today of the impact of global warming than we did three years ago. Also we were able to factor in other impacts such as that of aerosols," says Watson.

Developing countries are expected to be especially hurt by the impact of global warming on sea levels. In the report released on November 7, the scientists project that sea levels may rise by as much as one metre by the year 2100.

Such a rise would wipe out 80 per cent of the atolls in the Pacific, 17.5 per cent of the land in Bangladesh, and one per cent of the land in Egypt. Bangladesh and China would each see as many as 70 million people affected, the report says.

The climate change would cause increases in the outbreaks of diseases such as malaria, cholera, dengue fever, giardiasis, salmonellosis, viral encephalitis and yellow fever, it says.

The report is clear on the areas that would be hardest hit by the effects of global-warming. Coastal settlements, crops, deserts, forests, human health and water supply are most likely to be affected in most countries, it says.

"One of the potentially unique and destructive effects on human settlements is forced or international migration of populations," the report adds.

TILL today there has been little consensus among the development theorists, researchers, professionals and practitioners about the meaning of poverty and the modalities of alleviating it. Experience suggests much of the conceptual disagreement about poverty alleviation (PA) strategies stems from ad hocism practised by the rural development "tourists" who prescribe PA measures, which conflicts with the empiricism of the local practitioners having intimate link with the rural poor.

Poverty implies a condition of people's incapability to satisfy their basic needs; it also signifies absence of facilities to generate resources where potentials are present. Poverty persists where people continue to depend or rely on outside help for their sustenance. Thus poverty alleviation consists in the reduction of dependence on others for fulfillment of their basic needs.

In Bangladesh, the intensity of poverty is increasing, although its growth rate is increasing, literacy rate is improving, infant and maternal mortality rates are declining and access to health services has increased. Poverty still poses a formidable threat to the prosperity of the people here especially those living in the rural areas. Failure of earlier attempts to tackle poverty in this part of the region has prompted government, donor agencies,

development professionals to search for a better model to check the increasing rate of poverty and organise the poor for their meaningful survival.

The SAARC Commission has resolved that poverty in the region has to be confronted through a process of social mobilisation, which means, all segments of society need to come forward to joining hands in changing the lot of the poor people in the member-countries. The Commission's report states: "The centerpiece of policy framework for poverty alleviation has to be the mobilisation of the poor in order to enable them to participate directly and effectively in the decisions that affect their lives and prospects."

Against this background, UNDP has taken up a project entitled *Institutional Development at the Grassroots for Poverty Alleviation*. The project under the leadership of Badiur Rahman has set the stage for creative experimentation and intimate dialogue between the rural poor and the project team through application of a participatory approach.

The PA efforts in the Kishoreganj project area are based on a conceptual package developed by a team of UNDP consultants. The elements of the conceptual package are:

Organisation of the Poor : The first core element of the conceptual package relates to the need for bringing the

## POVERTY ALLEVIATION

### Institution-building at the Grassroots

by Syed Naquib Muslim

disorganised rural poor into an organised fold. Village organisations (VOs) are to be formed with the villagers as their members. If their capacity for meaningful survival and sustained improvement is to be ensured, they must organise themselves and learn how to manage their own affairs. VOs will be a basic instrument to carry forward social mobilisation to attack the abject poverty in the rural area.

Human Resource Development (HRD) : The poor people need to be imparted occupational, managerial and human skills so that they can build their capacity to make optimal use of their human, material and financial resources.

Capital Formation for Productive Investment : Without forming capital of their own, the poor can never achieve self-reliance and reduce their dependence on relief, dole and charity. Villagers need to be encouraged to save money regularly so that they can grow their own capital and invest it in the productive sector. Savings will enable them to gain access to institutional credit.

Village Organisations

One of the reasons for which the poor continue to remain poor is that they do not have organisations of their own. The poor still do not have any forum or platform through which they can counteract the unfriendly forces, share their sufferings and sorrows, or fight against poverty. They therefore must build organisations and this is the stepping-stone for building institutions of their own.

Basing on this idea, the project has started organising the villagers under an institutional umbrella. Till date, the project has been able to form 96 village organisations (VOs) in 9 unions of the Kishoreganj Sadar thana. These VOs are conceived to be the engines of village development. These are instrument of mobilising not only financial resources; these also help in tapping the human resources and utilising them for economic benefit. These act as the means to assess the training needs of the villages.

Human Resource Development Activities

Economic growth is a necessary but not a sufficient condition for decreasing poverty. When the villagers learn how to earn income, they must also learn how to use their earnings productively. For these, they need to develop organisational management skills. In fact, skills constitute the foundation on

which their institutions will rest. The project team has, therefore, identified training or HRD as one of core elements for institution-building. Training clientele constitutes: Internal staff (administrative and field workers; managers/presidents of VOs; farmers/workers/activists; and government officials working in the project area (Sensitization).

Thus training will be provided broadly to two major groups: training for poverty-related workers and training for the poor.

In many cases, agri-specialists or other persons are sometimes found to be available. The project will explore these knowledgeable persons and prepare them in such a way that they can function as master trainers to the members of village organisations. Priority will be given to training of female members on cattle-rearing, poultry, and vegetable-growing because they have exhibited interest in these areas and they are the persons who devote time to taking care.

Capital Formation

VOs can transform themselves into strong development constituencies or growth units if they can generate capital of their own. VOs therefore have installed a culture of savings among the members. Each member not only attends the weekly meeting but also deposits money through entry into the passbook; minimum savings amount has been fixed at taka 5 per week. Managers are required to submit weekly reports reflecting the number of attendees of meetings, total savings deposited by the VO members. Weekly report is a mechanism of holding the leadership accountable for their performance.

One of the unique features of VOs is that they manage their own organisations. The managers receive weekly savings deposit from the members, record the savings amount in the Pass-Book, Savings Register and deposit it with the local branches of scheduled commercial banks. By performing all these functions every week, they are slowly developing their management capability.

Linkage with Development Partners

Poverty alleviation cannot be handled in an isolated fashion. The complexity and multi-disciplinary nature of the job demands collaboration between or among agencies engaged in reaching the poor. If quality of services is to be improved, multitude of the poor are to be reached, it is necessary for the pro-

gramme to tap or explore the available sources of expertise and experiences gained by other organisations engaged in PA activities. Thus linkage or institutional bond is a necessary prerequisite.

Technology is a key parameter for social development. This helps the villagers in improving their life style as well as work method. Therefore, institutional linkage may be forged with Intermediate Technology Development Group (ITDG) a rural-based international NGO which is engaged in assisting the poor and landless men and women to increase their income through viable small scale enterprises. Thrust of ITDG activities is training on food-processing, dyeing, vegetable-drying, block-printing and weaving.

All the line offices of Thana administration are equipped with facilities for delivering social services to the local people. Each office is staffed with professionals who provide health, livestock, agriculture services or inputs. Although their manpower is not adequate to reach the villages concurrently and identify their needs, VOs can still keep close links with these departments so that they can ventilate their needs to the relevant line office for redress. Government family planning or welfare workers may be invited to each weekly VO meeting to provide, by turns, advisory services to the villagers. Villagers can hold the Public Health Engineering Department accountable for not repairing the inoperative deep tubewells through their VOs. At each VO meeting, livestock experts may be requested to discuss issues of cattle-rearing, poultry-raising, inadequate supply of medicines etc. VOs can question why fertilisers are selling at exorbitant prices and an artificial crisis is created to the sufferings of the small farmers.

Collaborative training programmes may be organised with the assistance of professional trainers working with RD-12 project of BRDB which has rich experience in the field of entrepreneurship development of the poor. Linkage may be established with BRAC and ASA for organizing training on poultry, carpentry, sewing etc meant for women. Although there is little scope for collaboration with Grameen Bank on training and other activities, constant link may be maintained to ensure that the same person does not enjoy credit benefit of several organisations simultaneously.

Lessons drawn from field

work can be recorded as :

Despite having resource constraints, the government still remains the largest provider of services and resources to the poor. Social mobilisation for poverty alleviation cannot be truly achieved if government organisations (GOs) operating in the project area are bypassed. It is therefore necessary to establish intimate link between VOs and GOs. Non-governmental development agencies need not glorify the weaknesses of the government; they should rather try to supplement the deficiencies without interfering with the governmental programmes for poverty alleviation. Thus the objective of forging the link is, not to destabilise but to debureaucratise the traditional dilatory delivery system of the government aiming at promoting its efficiency.

Blind replication of any foreign development model or even local one will give little pay-off to the people. Development agencies or workers must respect the prevailing cultural conditions, behaviours and sentiments of the local people. If any foreign model is tested on imposition, it is likely to meet a glorious failure. This has been testified by the historical example of the Comilla Approach which did not succeed in the other parts of Bangladesh. The Best model is one which evolves through a trial and error process, through peoples' own-experiences.

Projects should not be thrust upon the poor on the plea of experimentation. If poverty is genuinely thought to be alleviated, the poor people who are experiencing the problems themselves, should plan their own projects basing on their choice, capability and need. Any project which is not doable, practicable should not be taken up.

Out of bitter experience, the people are now reluctant to approach any institution for credit or loan. Creation of an intermediary person in the Swanirvar Programme proved harmful as most of these persons played foul with the poor loanees. They therefore prefer to receive credit direct and also repay it direct.

Experiences of a multitude of development agencies suggest that many projects in this country failed because these were conceived to be having long term benefit. Poverty alleviation strategy in this country calls for undertaking projects which yield immediate benefit or income to the poor.

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