



AIR POLLUTION AND URBAN HEALTH : SOME ISSUES

A. MURLIDHAR RAO

Director, Women's Studies Centre

Department of Economics, Osmania University College for Women, Koti, Hyderabad-500 095

INTRODUCTION

Indian's Environmental problems are mainly due to its high population presence and limited natural resources India accounts for 15 percent of the world's Population but has only 2.4 percent of the World's land area. Our Development process has not only ignored environmental consideration but has been an unjust and imbalanced development.

Our natural resources are getting depleted at alarming rates. Some 1.5 Million hectares of land turn barren every year because of deforestation.

According to the report of the National Commission on Floods (1980) the annual expenditure on flood and drought relief is more than Rs.1500 cores which is in addition to the colossal loss of life and property. In India, every 2.5 million hectares land turns into waste land due to environmental degradation.

Besides these, Industrial activities, *Motor* transport and burning of fossil fuels have been emitting large quantities of pollutants into the atmosphere.

Even rivers are also polluted by untreated effluents from industries reducing the availability of drinking water.

All these are the environment problems existing in India.

PROTECTION OF THE ENVIRONMENT

Protection of the Environment thus poses a fundamental challenge to the nation's desire to industrialize faster. Various efforts are being made to control India's environmental problems.

The Government has recognised the need for land and water resources management and the protection of environmental resources to included in the constitution since 1977. The constitution (42nd Amendment) Act of 1977 obligates the Government to protect and improve environment for the good of the society as a whole.

Indian's first national law on environment was the insecticides Act enacted in 1968 for regulating the import manufacture, sale, transport, distribution and use of insecticides in order to reduce test to human beings or animals. The Act however, did not provide for

any compensation for damages arising out of poisoning from insecticides and failed to check the growth of misbranded and spurious products.

The year 1972 was a land mark in the history of environmental management in India. India in this particular year attempted the first national efforts to address environmental protection through the formation of the National Committee of Environmental planning and Coordination. The NCEPC was setup in 1972 to prepare reports on the state of environment in India for the Human Environment conference at Stockholm in June 1972. It was setup to promote greater co-ordination and integration in environmental policies and programmes. This committee was mandated to advise the government on environment problems and assess environmental consequences of large development projects.

In the same year (1972) the wild life (Protection) Act was enacted to provide the protection of wild animals and birds. The act provided the constitution of a wild life advisory board for each state regulation of the hunting of wild animals and birds specified procedures for declaring areas as sanctuaries and national parks.

The first National law for air pollution control was enacted in 1974. The water (Prevention and Control of pollution) Act of 1974 this marked an important milestone in environment legislation in India.

Air Pollution

Atmosphere is the life blanket of earth, the essential ingredient for all living things. Air covers every part of the two hundred million square miles of the earth's surface.

The atmosphere is not just the air breathed by people, animals and plants .but it is also a gaseous substance enveloping the earth, Protecting it from abrupt changes in temperature and protecting all living beings from harmful solar and cosmic radiation.

For a long time the problem of air pollution in the cities was chiefly connected with coal burning in heating systems which emitted smoke ashes and sulphurous gas. Today industrial enterprises and automobiles are the primary source of atmospheric



Prof Anagandula Muralidhar Rao (b. 1959) hails from a semi-urban area KHAMMAM a district head-quarter of Khammam District in AP. his studies from LKG to Graduation (BA) (1963 to 1978) in Khammam. From PG to Ph.D from Kakatiya University, Warangal, AP (1978 to 1988). Started his career as Lecturer in Economics from Sri Lakshmi Narasimha Degree College (1984) and Dr BR Ambedkar College (1984 to 1990) and then entered into Osmania University Services in the year since 1990 became Professor of Economics in the year 2000 January. About 40 National & 20 International Research papers published in various National & International Journals. Guided/Supervised 12 Ph D Scholars 6 M. Phil Scholars. Presently 6 Ph D scholars are doing research under his guidance. He was a visiting Prof to Madurai Kamaraj University Madurai. Completed 5 UGC Major Research Projects & % ICSSR Major Research Projects & 4 both Minor Projects of UGC & ICSSR. Presently he the Director, Women's Studies Centre which is sanctioned by UGC under XIth Plan Period as well as Coordinator, Career Oriented Course in Family Counseling which is again sanctioned by UGC under XIth Plan Period

pollution.. Industry pollution the atmosphere by emissions of harmful gases and industrial dust. The chemical composition of emission into the atmosphere. is different depending on the kind of fuel, raw materials, technology etc.

Air pollution is defined by who as the presence in the air of substances put thereby acts of man in concentrations sufficient to interfere with the comfort, safety or health of man or with the full use or

enjoyment of his property. The presence of contaminants in the atmosphere is considered to be in sufficient quantities and duration to cause them to be injurious to human health, animal and plant life and reduce welfare in general.

Effects of Air pollutants on Human Health

In the recent past there has been a dramatic recent in the respiratory disease. This is because of the air pollutions that attack human health primary through the respiratory system.

Toxic substances enter the human body by ingestion, by absorption through the skin or eyes, by means of a puncture or injection or by inhaling dust or gas.

Carbon monoxide and hydrogen sulphide are asphyxiating pollutants, that is, they displace the oxygen being transferred to haemoglobin molecules. Hence as increasing concentration of carbon monoxide or hydrogen sulphide are inhaled, the quantity of life sustaining oxygen that the blood stream transports from the lungs disease several hours of exposure to carbon monoxide to 100 ppm (parts per million) results in dizziness, headache and impaired perception, Heart patients appear to be particularly susceptible to the

adverse effect of carbon monoxide and hydrogen sulphide. In very high concentration, hydrogen sulphide impairs that part of the brain that controls chest movements essential for normal breathing and cause almost instantaneous death.

Certain particles are harmful when inhaled due to their interactions with other air pollutants. Some particles interfere with the functioning of cilia, thereby slowing the flow of mucus and increasing the retention of toxic pollutants in lungs.

Some toxic pollutants are so widely distributed in the general environment that to some extent they pose a potential health hazard to all human beings.

The two air pollutants most hazardous to other species are fluoride and lead. The processing of ceramics and phosphate rock releases fluorides into the atmosphere. Some plant species are damaged by hydrogen fluoride at a concentration of only 0.1 parts per billion. Fluoride reduce cattle milk production and attack teeth and bones producing lameness. Chronic fluorosis eventually leads to death. Animals are also victims of lead poisoning.

Air pollution also effecting plants and material goods such as buildings, fabrics and cars,

Even the climate is also effecting by the air pollution. Increasing concentration of carbon-dioxide results in an increase in the absorption and radiation of infrared rays which warms the lower atmosphere the atmosphere absorbs a large percentage of the infrared radiation that is emitted by the earth's surface.

Air pollution in India

In order to measure and control the magnitude of air pollution in various industrial center of India, National environmental Engineering Research Institute (NEERI) has established air monitoring station in . Bombay, Calcutta, Delhi, Madras, Hyderabad, Kanpur, Jaipur, Ahmedabad & Nagpur.

One of their survey reported that air pollution by sulphur dioxide is highest in Bombay and air pollution by suspended particulate matter is highest in Delhi.

Another study of NEERI reveals a gradual but steady increase in levels of suspended Particulate matter (SPM) in Calcutta since 1977 with 96 percent increase since 1970.

The Global Environmental Monitoring System (GEMS) also reports highest SPM concentration in Calcutta during 1976 - 80.

On Dec- 2nd - 3rd, 1984 Bhopal witnessed an unprecedented tragedy caused by massive leakage of methyl isocyanide (MIC) from the Union Carbide pesticide plant MIC was used by the plant to produce savin, a pesticide.

To control air pollution, in India, the 42nd Amendment of the constitution has provided under articles 48A and 51A the legal foundation of environmental protection. Further the air (prevention and control or pollution) Act 1981, prescribes emission

Table 1: Rural Health indicators in Selected States by Extent of PRI Empowerment.

State Categories	CBR	COR	IMR	EL ₀	TFR	P<15	LR
With Empowered PRIs							
Maharashtra	4.9	8.7	58	62.0	3.2	35.6	52.3
Tamil Nadu	19.9	8.7	60	60.5	2.2	32.2	51.3
Gujarat	26.8	8.2	68	59.1	3.3	34.2	48.6
Andhra Pradesh	23.5	9.1	73	59.7	2.7	33.7	32.7
Karnataka	24.1	8.6	65	60.1	3.1	35.1	44.3
West Bengal	25.3	8.0	57	60.0	3.4	37.8	46.7
Average for India	29.3	9.7	78	58.0	3.8	37.6	39.3
With Disabled PRIs							
Uttar Pradesh	35.2	10.6	88	55.0	5.6	39.9	25.3
MadyaPradesh	34.2	11.8	102	52.3	4.7	38.3	28.9
Rajasthan	33.9	9.5	90	55.6	4.8	39.6	20.4
Bihar	33.1	10.6	74	57.7	4.2	41.6	22.9
Orissa	33.1	11.1	98	54.9	3.2	34.4	34.7
Assam	28.9	10.1	79	54.1	3.6	40.6	43.0

Source of Data: Foundation for Research in Health System (2006) , Health Monitor, Ahmedabad

NOTE:

CBR= Crude Birth Rate, Rural, 1996. CDR = Crude Death Rate, Rural, 1996. IMR = infant Mortality Rate, Rural, 1996. TRF= Total Fertility Rate, Rural, 1994..

EL₀ = Expectation of Life at Birth, Rural, 1989-93 .

P< 15= Percentage of the Population Below 15 years of Age.

LR = Literacy Rate, Rural Female, 1991.

standards for air polluting industries.

In the panchayati Raj System, health is the responsibility of the Zilla Parishad (ZP) . The Primary Health Centers (PHCs) with its sub centers should serve as a focal point through which integrated curative preventive and promotive health care should be provided to the entire population, especially to the families below the poverty line, under its jurisdiction. (N.S.Deodhar, 2000) As in the case of the sub-centers, primary. health centers may require jurisdictional adjustments to facilitate better service quality and coverage. It is important to recognize that, at present, most of the primary health centers do not function properly.

The health status of the people is fundamentally determined by three factors: environment, nutrition and lifestyle . Health programmes have to tackle these issues effectively and in an integrated manner. This cannot be achieved with out mustering the active involvement and participation of the people in achieving the goal of Health

For All through the primary health care approach. The 73rd and 74th Constitutional Amendment Acts of 1992 , have provided an excellent frame work for democratic decentralization for active involvement of the people through the Panchayati Raj institutions and small Nagar Palikas in all development programmes including public health, sanitation, etc. A genuine and faithful process of decentralization, devolution of authority, transfer of adequate funds and financial powers, technical support, etc. on the part of the Government are now necessary. The process of placing people's health in their own hands should be considerably accelerated. Decomcratic decentralization, if effectively operative, improve the situation as the Statistics in Table 1. Show. With area specific decentralized planning, development can be accelerated and disparities reduced. However, decentralization has to be adequate effectual and duly supported by empowerment of the people m, requisite authority, finance and technical assistance etc, Primary health care should become a part and function of the Panchayati Raj structure. it has to be well -planned and specifically adopted to the needs of the district and its villages. Involvements of the central and state Government. should be minimum and catalytic.

TABLE - II India 2002 - 2003 9 Health 9 Nutrition & Population by Socio Economic Status (Sample size = 5,00,755)

Indicator	Socio-economic Status		
	Poorest	Richest	Average
UMR/1000 births	109.2	44.0	86.3
U5MR/1000 births	154.7	54.8	118.8
Total Fertility Rate	4.1	2.	3.4
Age Specific Fertility Rate			
Per 1000 Women, (15-19yr)	135	45	116
Immunization coverage - For all vaccines, %	17.1	65.0	35.4
-Not immunized at all, %	48.4	7.8	30.0
Delivery Attended by a Trained Persons, %	11.9	78.7	34.3
Use of contraceptives by Married women %	24.9	50.6	36.5

Source of Data: Country Reports on Health Nutrition, Population Status and Service Use among Poor and Rich, World Bank, HNP May 2006. NOTE: IMR = INFANT Mortality Rate

U5MR = Under Five Mortality Rate (of children)

The constitution of world Health organisation (WHO) defines health as "a state of complete physical, mental and social well - being and not merely the absence

of disease or infirmity" Thus, Health of a community has to be viewed in a broad perspective than merely in terms of demographic indicators. The basic objective of any health care delivery system, therefore, would be to provide and organize the services in such a way that it reaches to every one and available resources and knowledge and technology is optimally utilized. Recognising its importance and imperatives, the WHO Constitution further states' that "the enjoyment of highest attainable standards of health is one of the fundamental rights of every human being" .Hence the responsibilities entrusted upon good governance is much more in terms of providing quality health care services to its citizens. In facts, in India, several policy initiatives have been taken up from time to time in this direction to deal with various aspects of delivery of health care and family welfare. One of the important lessons gained so far is that the policies and programmes could not reach up to the expected mark.

Health and population explosion are major interdependent issues. Health Statistics clearly reveal that both survival and welfare of our people is closely associated with their Socio - Economic Status (See Table -2) .

The post Bhopal decade saw a series of new environmental laws prominent among them being the Environmental (Protection) Act 1986, factories (Amendment) Act 1987 "Public liability Insurance Act (1991) , & National environmental tribunal Act (1995) .

The united Nation's Conference on Environment and Development at Riode Janeiro, In 1992, Prompted the government to enact the National Environment Tribunal Act in 1995 in response to the resolution

adopted at the conference. The Resolution called upon member countries to develop national laws fixing liability in cases of industrial accidents and providing for compensation to victims of accidents during the handling of hazardous substance and for environmental charges.

Conclusion: Air pollution is one of the very complex problems that is closely associated with us. A point has been reached at which urgent action is needed to prevent further deterioration in air quality. We need better and newer techniques of production that would pollute less and upto date our pollution control technology.

Participation of the People is essential because without it no development can take place. Many of our failures are due to poor management. What is required is performance.

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