



SOCIAL & HEALTH DEGRADATION DUE TO AIR POLLUTION AT HALDIA INDUSTRIAL BELT IN WEST BENGAL

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Abstract

Air Pollution in Haldia being industrial area, is caused by the addition of various hazardous chemicals, particulate matter, toxic substances and biological organisms into the Earth's atmosphere. As the number of humans on Earth increases, our industrial and vehicular activities have a greater impact on the Environment. Undoubtedly all human activities are directly or indirectly affected by the vagaries of weather.

Key Words: Pollution, Atmosphere. Ecosystem, Environment, Urbanization, Degradation, Conservation, Management, Awareness, Forecasts.

Introduction

Air Pollution is caused due to introduction of harmful materials, biological molecules, into the atmosphere resulting in damage to living organisms, as a threat to animal kingdom, polluting in the atmosphere and thus degrading human health and the ecosystem. Especially urban air quality gradually becomes worst due to toxic pollutant of air. Which increases in beginning of the 20th century with the development of transportation systems, large scale use of petrol and diesel and also development of industries.

According to report of the World Health Organization (WHO), air pollution in 2012 caused death of around 7 million people worldwide.

Historical Background in Air Pollution

Thus, air pollution particularly bad air quality in many large cities of the world can affect the health of human being as well as many living things.

As per report of environmental degradation in world, it may be seen in:

1. Meuse valley incident of Belgium and France in 1930.
2. Tokyo Yokohama Asthma in 1946.
3. Donora Smog incident in Pennsylvania, 1948.
4. London Smog incident in 1952.
5. Los Angles Smog incident in 1966.

In Case of national incidents of environmental degradation it is reported to four places like:

1. Chernobyl tragedy is 1953.
2. Bhopal MIC gas tragedy in 1984.
3. Oleum leakage in Delhi is 1985.
4. Chorine Accident in Mumbai is 1985.

Origin of the Research Problem

The origin of air pollution on the Earth can be traced back to the time when man started using fire wood as a means of cooking and heating. It was recognized as a problem 700 years ago in London in the form of smoke pollution, which led to the first anti-pollution law to restrict people from using coal from domestic heating in the year 1273. In the year 1300, another Act burning the use of coal was passed, defying the law to imposition of capital punishment. In spite of this, air pollution becomes a serious problem in London during the age of industrial revolution.

Objectives of the Study

Air Pollution created various problems of environment, resulting in damages of the social atmosphere. Various causes of air pollution need to be evaluated along with their effect on the social life in the haldia industrial region.

observation to be made:

1. To find out the degradation of Industrial belt due to air pollution.
2. To identify the social-economic situation of air pollution.
3. To trace out health degradation due to air pollution .
4. To find out the nature of environment degradation in Halida.
5. To assess the increasing rate of air pollution and its management in the study area.
6. To discuss about decreasing health status of local people.



7. To know about impact on air pollution to vegetation, agriculture etc in the area.

Industrialization in Haldia

After independence, there has been a spurt in the process of industrialization and urbanization in India. Several industries have developed in order to cater to the needs of a rapidly growing population.

Haldia is being developed in to a major trade port for Eastern India. The city has several important industrial factories such as:

i) Indian oil corporation ltd ii) south asian petro-chemicals iii) exide iv) Haldia petro-chemicals v) tata chemicals etc etc. Over the last three decades, the rapid growth and industrialization in this area has however resulted in considerable air pollution. The study seeks to analyses the adverse effect on society and health caused by industrialization in the Haldia region.

Haldia's Industries Visited Picture



Petro Carbon & Chemicals Pvt.Ltd



IOC Area



Haldia Refiner



Interview

Significance of the Study

Impact of air pollution on vegetation, agriculture, health of human being's and environment in the study area is essential to know and assess for the present and future generation. For this, help of the Govt. and also NGO is necessary for the awareness of local people.

Methodology

Various problems arise due to air pollution particularly in the Industrial belt, have to be analyzed in the following method:

i) Investigation and observation method, ii) sampling collection, iii) questionnaire making, iv) data collection and survey. Lastly statistical methods are very important and also study of books & journals and library visit etc.

Interdisciplinary Relevance

Rapidly growing industrializing and urbanization has resulted into accelerated rate of rapacious exploitation of natural resources. The development of modern technologies and increased economic activities of man have aggravated the problem of depletion of natural resources. Environmental degradation and pollution at local, regional & global levels have created ecological crisis.

Table I. "Analysis of Pollutants in Haldia"

Different Industries	Their Principal Effluents
Nitric Acid	NO _x
Sulfuric Acid	SO ₂ , Smog type acid
Irons & Steel	Co, Industrial Pollutant
Oil Refiner	oil, grease, phenol, sulfide, BOD
Sugar Mills	BOD
Atomic Energy Plants	Temperature, Zinc, Oil, grease, iron, chromium, phosphate
Electro Planting	Temperature, Zinc, Oil, grease ,lead, chromium, phosphate, Nitrogen
Petro-Chemical	Hydrocarbons, Phenol, Sulfide, COD, Cyanide, flurried, chromium
Chemical hub (Fertilizers)	Nitrogen, Cyanide, DDT, methyl, Oil, grease, lead, vanadium, arsenic, copper phosphate, sulfide, sulfate
Paper mill	Free Chlorine

Table II. "Analysis of Various Gases Exhausts from Vehicles"

Percentage	Engine Starting	High Speed	Running	Low Speed
Diesel Engine				
Carbon Monoxides	Something	0.1	Something	Something
Hydrocarbons	0.08	0.02	0.01	0.03
Nitrogen Oxides	60	850	250	30



Petrol Engine				
Carbon Monoxide	7.0	2.5	1.8	2.0
Hydrocarbon	0.5	0.2	0.1	1.0
Nitrogen Oxides	30	1050	650	20

The basic aim of environmental geography is to create a symbiosis between man and environment and to establish harmonious relationship between them for the welfare of the human society.

Table III. Local Atmospheric Effect

Vital / Primary Pollutants	Secondary Pollutants
SO ₂ + ((H ₂ O +O ₂))	H ₂ SO ₄
NO ₂ +H ₂ O	HNO ₂ HNO ₃ N ₂ O
CO ₂ +H ₂ O	H ₂ SO
H ₂ S+O ₂	H ₂ SO ₄
HF+H ₂ O	HF

Table IV. Effect of Air Pollution

Green house Gases	Percent (by temperature)	Pie chart
Methane	18%	
CFC	14%	
Carbon dioxide	49%	
Nitrogen Oxide	6%	
Other, gases	13%	

Discussion

Most of the principal effluent studies in different Industries contain particularly hydrogen sulphide, fluorides, air pollution in green house gases, carbon monoxide, carbon dioxide, hydrocarbons, particulate, sulfur, methane, CFC and other gases, nitrogen oxides etc. Further, it was observed that Nitrogen oxides contain more in petrol Engines. Especially when the petrol vehicles run in high speed and in running stage compared to diesel engines.

Conclusion

Trees, fruits, vegetable and flowers in Haldia belt has been reported to be widely damaged earlier by air pollution. It also causes damage to properly and materials, smokes, dusts and oxides of sulfur have harmful effects on structures. Hydrogen sulfide is also toxic lead emitted from automobile exhausts in , dangerous to children. Nitric oxide caused pulmonary irritation and its excess concentration may cause pulmonary hemorrhage, carbon monoxide often effect the oxygen caring capacity of blood.

Thus the air pollution is very harmful to the environment, social degradation and damage to living organisms.

Benefit of this Study

With the help of this work, about 3 lak people of Haldia is expected to benefitted and also make pollution free environment in this study area which is possible by the awareness of the local people. Further, all the industries should take precautionary measures and also all types of vehicles running should make the area smoking free zone.

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