

**THE UNIVERSITY OF BURDWAN**  
**SARAT CENTENARY COLLEGE**  
**PROJECT REPORT**



**Submitted by** : Akashdip Das

**Roll no.** : 220641210002

**Registration No.** : 202201051663 of 2022-23

**Stream** : B.Sc. (General) in Bioscience

**Semester** : 1<sup>st</sup> Semester (CBCS)

**Project Title** : A Project Report on Environmental  
Pollution.

**Subject** : Environmental Studies

I am grateful to all the teachers of 'Environmental Studies' department in our college. I am really thankful to all of my respected teachers for their encouraging words and monitoring, individual care in selecting a topic for this project.

I am also grateful to my parents who have rendered valuable suggestions for improvement of the project work.

Last but not the least, I am grateful to all of my friends, family members and many other well-wishers who helped me in numerous ways in completing the project successfully. I choose this opportunity to acknowledge all of their contributions with gratitude.

Signature of the teacher  
(Or, Project Guide)

Akashdip Das

Signature of the  
candidate

# DECLARATION

DATE

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I, Akashdip Das, am declaring that, 'Environmental Pollution' - the topic of our Environmental Studies Project work is not copied from any other students studying in our college. I have studied many books, visited a local polluted site (urban and rural) and collected data from them for constructing this project work (report).

If my project report is found to be plagiarised, I will have no objection to the cancellation of my project report.

This project report is the record of authentic work carried out by me.

Date :

Akashdip Das

Signature of Candidate

# CERTIFICATE OF THE GUIDE/SUPERVISOR

DATE

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This is to certify that Mr. Akashdip Das, student of Sarat Centenary College (Dhaniakhali, Hooghly, WB, PIN-712302) has successfully completed the project work titled "Environmental Pollution".

This project work is the record of authentic work carried out by him.

He has worked under my guidance.

Date:

Signature of Project guide

# INTRODUCTION

DATE

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"We are living on the planet as if we have another one to go to."

~ Terry Swearingen

"Environmental pollution is an incurable disease. It can only be prevented."

~ Barry Commoner

Pollution is defined as the introduction of certain substances called pollutants into the environment that causes injury or discomfort or direct death to humans and other living species, thus, adversely affecting human life, industrial progress, living conditions and cultural assets.

Both rural and urban environment today is polluted, in fact, highly polluted, which is unfit and unhealthy for human habitation. By various means, people are destroying the beautiful environment. Pollutants are pollution causing substances, for example, municipal sewage, CO (from motor vehicle exhaust), SO<sub>2</sub> (from industries), DDT, pesticides, fertilizers, weedicides, dust storms, pollens, industrial waste, CO<sub>2</sub>, heavy metals like lead and mercury, etc.

People today are harming themselves unknowingly by polluting the beautiful environment. Due to pollution, air that we breathe is becoming toxic day-by-day. People should be careful and should not pollute the environment continuously day-by-day. Air, water, soil - everything of these are polluted today.

Automobiles are the largest source of air pollution in the metro cities. Automobiles release CO (77.2%), nitrogen oxide (7.7%) and hydrocarbons (13.7%).

Approximately, 312 tonnes of lead is let out into Delhi's environment every year. This can endanger the people to lead poisoning.

### List of Several Air Pollutants

### Type of the Pollutant

### Source

1) CO	→	Primary	→	motor vehicle
2) SO <sub>2</sub>	→	Primary	→	industries
3) CO <sub>2</sub>	→	Primary	→	burning of fossil fuels
4) Chlorofluorocarbons (CFCs), e.g., Freon gas	→	Primary	→	air conditioners, industrial refrigerators, etc.
5) Methane and Other hydrocarbons	→	Primary	→	Municipal land fill, microbial

<u>List of Several Air Pollutants</u>	<u>Type Of the Pollutant</u>	<u>Source</u>
		activity on sewage.

6) Suspended Particulate Matter (SPM)	Primary	Stone crushing, solids suspended in smoke, dust and vapour, building construction, etc.
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Several major water pollutants include plastics; dyes; pesticides; fluorides and chlorides; heavy metals like cadmium, mercury, lead, etc.; domestic effluents like human and animal excreta, detergents; organic industrial effluents like phenol, cellulose fibres. The surface run off from field of inorganic fertilizers, pesticides, insecticides, manures bring heavy loads of pollutants into natural water bodies. Pesticides like DDT are non-biodegradable.

Major soil pollutants include kitchen garbage, broken bottles, cloth rags, ash, dyes, various herbicides, fungicides and pesticides and variety of chemical fertilizers which are used for high productivity. The dumping of human excreta and waste from cow sheds and slaughter houses befouls the land. Human excreta also contains many pathogens like bacteria, protozoans, fungi and viruses which cause many soil-borne diseases in plants and animals including man.

# PROBLEMS

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We know that a rural environment is a beautiful clear pollution-free environment but today this beautiful clear pollution-free rural environment has become the victim of several types of pollution. The thought that a rural environment is pollution-free is completely wrong according to today's scenario. We, the human beings are not only the victims of pollution's hazards but also other animals including birds and domestic animals are in the list of the victims of hazardous consequences of pollution. Air, water, soil - all the three precious resources are polluted today in both rural and urban areas. Polluted environment is causing many health hazards to human life and also to the life of other living organisms. From mild diseases to cancer, the range of health hazards of pollution extends.



# OBJECTIVES

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The major objectives or aim of this project work titled "Environmental Pollution" are listed one-by-one below :-

(i) To prepare a list of the diseases affecting the people of the survey area.

(ii) To prepare a list of the pollution-causing agents (i.e., pollutants) affecting the life of the people in the survey area.

(iii) To prepare an outline on the ways by which several types of pollution can be reduced (i.e., Preventive measures of Pollution)

# Location of Study Area

The survey is conducted on the rural areas of Birbhum and Burdwan districts of west Bengal. Burdwan (also spelled Bardhaman) is bifurcated into two districts - Purba Bardhaman and Paschim Bardhaman district.

## Some Informations of the Survey :-

Number of people in a particular rural area (as per the Survey) associated with the survey : 153 (Total no. of people in the rural area may vary.)

Most of the people in that particular rural area associated with the survey : Uneducated

Air Quality Index (AQI) during the Survey Period : 193 (Unhealthy)

Main Pollutant during the Survey Period : PM<sub>2.5</sub>

Info: PM<sub>2.5</sub> concentration in Bardhaman is currently 27.5 times the WHO annual air quality guideline value.

# METHODS OF DATA COLLECTION

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Primary means of data collection :- I have collected the necessary data by asking varieties of questions to the people of the survey area, i.e., by means of questioning.

Secondary means of data collection :- I have collected other informations from different kinds of articles, books on environmental studies. I have also taken the help of internet in collecting the necessary data or informations for constructing this project report.

# REPORT

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List of different pollution-causing pesticides :-

- (1) Carbofuran;
- (2) Carbaryl (1-naphthyl methylcarbamate);
- (3) Carbosulfan;
- (4) Endosulfan;
- (5) 2,4-D;
- (6) Phenyl mercury acetate;
- (7) Pentachlorophenol;
- (8) Sodium cyanide;
- (9) Methyl bromide;
- (10) Benzene hexachloride;
- (11) Ethylene dibromide;
- (12) Maleic hydrazide;
- (13) Isoprothuron; etc.

Symptoms of several diseases resulting from pesticides :-

(Health Hazards)

Humans → Headache, Weakness, Stomach pain or lower abdominal pain, Chest discomfort, Sweating, Sneezing with watery (red/pink) eyes, Loss of appetite, Nausea, Diarrhoea, Restlessness, Feeling of constriction in throat and chest, Rapid pulse, Excessive salivation and coughing, Loss of reflexes, Breathing problems, etc.

Fishes → Impaired metabolism in fishes, Oxidative stress, mutagenesis, inhibition of AChE activity, Carcinogenicity, direct death.

Birds → Adverse effect on reproduction in birds, weakening of flight ability of a bird, Internal hemorrhages, Reduced hormone levels, Impairment of thermoregulation inflicting inability of birds to withstand the coldness or hotness.

In our survey area, the effects of three major types of pollution, namely, Air pollution, Water pollution and Soil pollution has been observed. Even, many people during the survey had low (decreased) hearing ability which is clearly a health impact of noise or sound pollution.

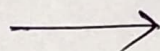
List of other Pollutants (except Pesticides) :-

<u>Pollutant found</u>	<u>Type of pollution</u>
① Toxic automobile exhaust	Air pollution
② Agricultural run-off (Pesticides) into a water body	Water pollution
③ Detergents	Water pollution
④ Domestic garbage	Water and soil pollution
⑤ Loud music speakers	Noise pollution
⑥ Honking horns & traffic, Traffic noise	Noise pollution
⑦ Crackers	Air and noise pollution
⑧ Plastics	Air pollution (when

Pollutant foundType of pollution~~⑨~~

burnt) and water pollution (when comes in contact with water body).

⑨ Fly Ash



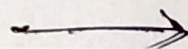
Air pollution

⑩ Animal excreta



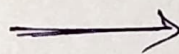
Soil pollution

⑪ Smoke and dust particles



Air pollution

⑫ Asbestos fibres



Air pollution

Important Information :- i) The asbestos fibres cause (From Internet) asbestosis, a kind of lung cancer.

ii) Liquid pollutants on contact with a water body can affect aquatic life and may kill fishes and other aquatic organisms.

iii) Dieldrin is about 5 times more

toxic than DDT when ingested and 40 times more poisonous when absorbed.

iv) Chlorinated hydrocarbons are known to affect CNS, cause softening of brain, cerebral haemorrhage, cirrhosis of liver, hypertension, cancer, malformation of sex hormones, etc.

All the twelve pollution causing agents or simply pollutants (listed on page-13 and 14) are affecting the general healthy life of the people in our survey area.

A list of the diseases affecting the people in our survey area is prepared on page-16.



Pollution has greatly affected both urban and rural areas. The consequence will be dangerous if awareness is not spread among the common people regarding pollution. Environmental pollution should be prevented at any cost to build up a safe, hygienic environment for future generations to survive. Every person should join hands together to fight against environmental pollution. We have to keep our Earth green, healthy and pollution free. Even if, the level of pollution may not get reduced to zero, yet we can surely take initiatives to cut down the rate of environmental pollution and at the same time, planting more and more trees.

Akashdip Das  
Signature