

# **CONSEQUENCES OF ENVIRONMENTAL POLLUTION ON HEALTH**

**A CASE STUDY OF KONTAGORA LOCAL  
GOVERNMENT AREA NIGER STATE.**

BY

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NIGER STATE OF NIGERIA.**

**MARCH, 2002**

## DECLARATION

I here by declare that this project is an original work undertaking by **Alhassan Mohammed PGD/GEO/2000/2001/148** and has been prepared in accordance with the regulations governing the preparation and presentation of projects in the Federal university of Technology Minna post graduate school.

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## CERTIFICATION

This is to certify that this project is an original work under taking by *Alhassan Mohammed PGD/GEO/2000/2001/148* and has been prepared in accordance with the regulations governing the preparation and presentation of projects in the Federal University of Technology Minna postgraduate school.



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## DEDICATION

This piece of work is dedicated to *Alhaji Yusuf Suleiman* Director Primary Health Care, Department Kontagora Local Government who through his assistance and encouragement made it possible for me to successfully complete this course (Postgraduate Diploma)



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## ABSTRACT

The purpose of this project is to identify the consequences of waste / sewage (environmental pollution) on Health in Kontagora Local Government Area of Niger State. The variables covered in this study were fulfill as related to the surrounding environment, waste pollution land pollution and its pollutants solid waste and sewage disposal attitude and habits as well as facility; its inefficiency and non availability.

Questionnaires and pictures of waste depot were the only instruments used in this study, questionnaires was the 2 points type of Yes / No (Agree or Disagree).

The data's collected were analysed using perentages for testing for the acceptance or rejection.

The major findings of the study were that there was a significant influence on the impact of filthiness, water pollution, poor waste / sewage management, ignorance, habits and attitudes of the citizens on the incidence or liability diseases epidemic amongst the inhabitants of Kontagora Local Government Area of Niger State.

Based on this some recommendations were made to avert or ameliorate the consequences of waste / sewage environmental pollution and diseases incidence in Kontagora Local Government Area of Niger State.

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## CHAPTER ONE

### 1.1 INTRODUCTION ✓

Environmental pollution is defined as the impairment of the suitability of the environment for any of its beneficial uses actual or potential by man's activities such as land utilisation building of industries, solid waste and sewage disposal and bad urban drainage system etc.

In case of this project the pollution is based mainly on indiscriminate solid waste / sewage and house hold garbage disposal, which is one of the biggest and certainly the oldest environmental problem in Nigeria. Its also merits the position of the only environmental problem that has pre-occupied the concerns of government and citizens of this country (Nigeria)

There is no doubt that poor system of wasted sewage disposal or management is one <sup>of the</sup> greatest problem of public health in this country (Nigeria) today <sup>in our metropolis</sup> Kontagora local government is not an exception it may lead to so many health problem and hazards such as spread of diseases like (i.e): Gastro enteritis, malaria, Typhoid fever and others to mention but few.

However human beings adopt themselves to their environment as they settle in one place, generating waste matters which are dumped in open ditches, drains to dry out and become the dust that is blown around the town by wind to cause pollution and health problems and hazard.

The more people value healthy living standard the more they will be willing to make appropriate allocation of any resources available to promote and safe guard their health against possible consequence of its pollution in their

homes surroundings and their sources of food and water supply. It is hoped that this project will serve as one that links the chain of efforts being pursued to stimulate environmental pollution awareness to become a reality in Kontagora Local Government Area.

## **1.2 AIMS AND OBJECTIVE /**

The major aims of this project is to study the consequences of environmental pollution on health in Kontagora Local Government and to find out the relationship and response of the community to the pollution through prepared questionnaires.

### **OBJECTIVES. /**

- To evaluate the health problems and hazards associated to environmental pollution.
- Explain the prospects of solid waste / sewage management system and design possible solution to prevent further pollutions.

## **1.3 SCOPE AND LIMITED**

There are certain factors which limited the amount of information that the researcher would have gather for this project.

- Firstly the amount of time available for data collection was so limited compared to the number of places to be visited to obtain the information.
- Secondly transportation to reach all the necessary places was often difficult.

- Thirdly, this study has been limited to Kontagora town with particular reference to solid waste / sewage disposal in relation to environmental pollution on health.
- Finally it is always very difficult to obtain data from questionnaires as some forms may be return due to poor responses.

#### 1.4 STATEMENT OF RESEARCH PROBLEM

The objective of clean environment is to create and maintain conditions in it, that will prevent the occurrence of the epidemic diseases, promote health status of the community, prolong their lives and promoted sustainable development.

Most of the diseases prevalent in our communities are attributed either directly or indirectly to improper environmental management, conservation, protection and lack of awareness as regards to its hazards to its hazards. Diseases such as Typhoid fever, malaria fever, Gastro-enteritis, Hilmitic diseases and host of others physical and chemical poisoning associated with environmental pollution have claimed many lives and incapacitated many people. It is the researchers opinion that continued exposure of the people to insanitary environment and inadequate waste / sewage management will be a bone the nation's health growth, unless urgent measures are taken to arrest the situation through proper conservation and accurate Environmental Impact Assessment.

## 1.5 AREA OF STUDY

### 1.5.1 Brief history *History of Minna*

Kontagora town is among the most populated town in Niger State. In 1946 it was the headquarter of then Kontagora Native Authority. When Niger State was created by 1976, it was among the eight Local Government created by the Murtala / Obasanjo Military Regime. Presently the headquarter of Kontagora Local Government Council. Kontagora town consist of four ward and six wards with the Local Government Area, such as follows:

Kontagora Town: *Minna Town*

- Gabas Ward *Limeiru ward A*
- Yamma Ward *" " B*
- Kudu Ward *Nassaua ward*
- Arewa Ward *Berrick Sale*

While others within the L.G.A. are:

- Madara Ward
- Madangyan / Alala Ward
- Rafingora Ward
- Maitefe / Kano Ward
- Masuga Ward
- Usalle / Kampaniwaya Ward.



### 1.5.2 Location and Climate ✓

Kontagora has a projected population of about 123,768 people (1993 census) located in Niger State of Nigeria, it lies between longitude  $5.28^{\circ}$  East and latitude  $10.25^{\circ}$  North. The climate is that of tropical rainforest zone with warm dry season from November to March and cooler raining season from April to October. The main annual average rainfall is about 1222 (mm) with the wettest month of August having about 238.0 (mm).

### 1.5.3 Health and other Social Amenities ✓

There is a General Hospital, Nigeria Army Hospital Maternal and Child Health Centre (MCH) <sup>numerous</sup> Five Local Dispensaries and about six private hospital with <sup>minority of</sup> in Kontagora town. For vital information there are Radio house, Nigeria Television Authority (NTA) and Nigeria Tele- Communication Limited (NITEL). Electricity is also available through National Electric Power Authority (NEPA)

### 1.5.4 People ✓

<sup>major</sup>  
The people of Kontagora are mainly:  
<sup>Chukuma & others</sup>  
Hausas, Kambari, Basawa and others.

The people are hard working and promote communal project like construction of Bridges, Clinic and Schools.

### 1.5.5 Occupation ✓

The main occupation of the people is agriculture (Farming and Animal Rearing ) The main crops produce are maize, millet, Guinea corn, Rice, Cassava and Yam for food stuff while Soya beans, Beans and Cotton served as their cash crops.

## CHAPTER TWO

### 2.1 LITERATURE REVIEW

Man has left unaltered the bodily construction physiological responses and emotional drives, which inherited from ancestor, environment on the other hand undergoes constant changes. Today's environmental is significantly different from the one in which man involved. To physicians the term environment is a nebulous term defiling precise definition. As such its a thin layer and life supports called the Biology organisms. While Udoh C.O (1990) sees environment as the chemical and biotic factor that act upon an organism or an ecological community and ultimately determine its form and survival.

According to Lucas et – al 1984) solid waste and sewage are always found man's environment and often serve as a sources of contamination and health hazards. From the above assertion and views one deduces that the efforts of environment are multi-farious and multi-dimensional. In both the rural and urban areas multi-dimensional. In both the rural and urban areas today wastes are produced by individuals and institutions Udoh C.O. (1990) opined that the physical environment are known to have very far reaching consequences for health. He further stressed that untreated water, careless disposal of solid and liquid human waste and over crowding may pose health problems for their victims gradually degrade the aesthelic nature of our environment which now pose threats to human health and the environment itself.

The worsening transformation of the environment has been the responsibility, of man himself. The clean up exercise of gutters along the roads has been the responsibility of the government. But the Local Government personnel purposefully charged in doing these work either do it unsatisfactory or totally refusing to do it by dodging, since adequate supervision is lacking.

Along side Mantell C.L (1971) has this to say that man has been blessed with good sense of reasoning the power to created so that he can add to what he has been given; But up till now he has not been a creator, only a destroyer. Forests keeps disappearing, river dried up, wildlifes becomes extinct, the climate's ruined and the land grow poorer and uglier everyday so bringing environmental standards up to scratch should be a task to be accomplished for the stakes are high and time may be running out.

Man has modified his environment continuously and frequently changes his way of life bringing about are setting changes in the prevalence and severity of various diseases which are always very closely related to responses to the environmental pollution.

A clean environment promote good health while a polluted one can endanger health. Lucas et – al (1984).

One of the greatest threats to public health is inefficient solid waste disposal in our environment. In this country today particularly in Kontagora metropolis, solid wastes and sewage is threatening the entire community environment Oluwande 1983.

Our streets and drainage are littered many roads are taken up by indiscriminate dumping waste materials Sofoluwe (1985) There is an urgent need to address the problem before it gets completely out hand. This is important because our water, land air are increasingly being polluted by wastes that are not properly handled or protected. The consequences of this pollution according to Lucas and Gilles (1984) may generate so many health hazard i.e. diseases epidemics which before control may claim many lives.

## 2.2 TYPES OF ENVIRONMENTAL POLLUTIONS ✓ ②

Air, Water and Land pollution have increasingly caused deterioration of our environment, that it lack capacity to sustain some development processes. Small scale industrial activities relating to production of Bread, Pure Water, deliberate dumping of house solid wastes, sewage and garbage and almost of other activities carried out by man aimed at solving his economic and social problem pollute the environment.

For the sake of this project work exercise the system of the pollution is based on solid waste/sewage from street shops, market places, house and others. Wastes from commercial activities which is done out in the open street every where are type of the environmental pollution within Kontagora metropolis. These waste materials found in man's environment causes unsightly condition, produces ghastly dour, attracts and provide breeding places for mosquitos, flies and vermins, causes fire out break among others.

## 2.3 PATTERN OF WASTE GENERATION AND DISPOSAL ①

Solid wastes, sewage and garbage's have been as a result of man's activities from his earliest civilization made more prominent during the industrial revolution intensified by technological development of the twentieth century and given political and economic exposure by the passage of the solid waste disposal. The origin, collection, processing and disposal of solid wastes are problems of modern society, its people and organizational structure these problem were met in earlier civilization in much the same way as they are met now by burning or by dumping and burying in the earth or at sea. ( Mantell 1975).

Most of waste generated within Kontagora town are from houses, market places and road side trading. They are often dump directly in drainages and by the road side. Opening dumping, composting, incineration, sanitary land filling are also practice.

- Waste Deposit: From the house hold the waste are collected and carried to the depot where it is deposited while awaiting collection and transportation to the final disposal ground, it is a confirmed fact that waste depots are not always provided for the sanitary storage of the waste and therefore the public use any open place near their domain or main roads and dump their waste there which results in all sorts of health hazard.

- Open Dumping:- Open dumping method of waste and sewage disposal as earlier on mentioned is practice almost all over in Nigeria and Kontagora in particular. It is the oldest method of refuse disposal inherited by modern society

from their ancestors who first started settling down in one place, domesticated plants and animals that resulted into the generation of waste. This leads to Air pollution, Water contamination, flies breeding, rats infestation, fire out breaks among others Udoh C. O. (1990).

- Dumping in drainages is one of the major problem facing our society today. People deposit solid waste and sewage into drainages with aim that it can be wash away by flowing water. It is often wash into stream and open shallow wells and get them contaminated.

- Sanitary land filling are sometimes badly practiced by just dumping the waste into any gauge or depression, open pits of any kind without covering the waste these leads to under ground water pollution and all health hazards mentioned earlier.

- In cineration is a sanitary way of reducing dried waste matters into ashes and as well as killing all the pathogenic organisms, but it has always resulted into creating health nuisance such as smoke which may cause atmospheric pollution if wrongly cited and possibly fire outbreak if poorly managed.

- Composting is also practices in Kontagora metropolis, this is the situation where animals dung and other waste are mix to discompose and they are later use on farm land as manure. The consequence of which may result into worm infestation (Hookworm) Tetanus infection. If any wound is sustained and various diseases manifestation. Almost some patterns of waste generation / disposal system are wrong and can cause improper environmental pollution and Health hazard.

## CHAPTER THREE

### 3.1 METHOD OF DATA COLLECTION ✓

The research employed four basic materials for this case study. They are questionnaires and reference like pictures and relevant journal together with information.

### 3.2 QUESTIONNAIRE METHOD ✓

Using structured questionnaires is reliable method of gathering information, because the respondents have the opportunity and confidence to put down what he / she knows about the subject matter. The questionnaires were provided with answers to be chosen by the respondents to reduce the vagueness of the result.

The questionnaires are administer to the selected people of the four (4) ward of the town two hundred fifty questionnaires scripts were given to each ward, priority were given to their occupation to avoid domination by one group which may affect the effective result of this project.

### 3.3 REFERENCE MATERIALS (PICTURES AND JOURNALS)

Some picture were obtain of waste depot / sewage and others waste dispose indiscriminately and are inserted for references in pages 17 -18 journal *subsequent pages* like health care magazine news papers and relevant books are also use to extract information for these project.

### 3.4 STRUCTURED INTERVIEW

The Director Health and Social Services, Kontagora Local Government who is directly concerned with waste management and environmental *Such urban development of A/S*



management respectively was interviewed on the subject matter generally. Also interviewed were the Environmental Health Officer incharge of district health offices in the Local government who commented on the success and failure of waste / sewage management in the area. Included in the lists of people interviewed were the members of the public, where the research used a random sampling technique within the various wards in the local government areas to collect oral information about the waste management exercise.

### **3.5 POPULATION AND SAMPLING PROCEDURE**

The total projected population of the area of study is about 123,768 (NPC 1993 census) The sample population of the study is five hundred (500) houses. The researcher carried out random sampling of the land lords or tenants who are adult members of the house through structured interview.

### **3.6 ANALYSIS**

The information obtained were analysed using the simple techniques of tabulation and percentages.



## **CHAPTER FOUR**

### **RESULTS AND DISCUSSION**

#### **4.0 DATA ANALYSIS**

The research after collecting back the questionnaires analyse data by the Means of tabulations in simple percentages. The questionnaires were examined to see the responses as design in the tables below. About 500 questionnaires were use for the data collection exercise.

#### **4.1 HEALTH PROBLEMS AND HAZARDS ASSOCIATED TO WASTE / SEWAGE ENVIRONMENTAL POLLUTION.**

The are several health problems associated to waste / sewage caused polluted environment. Some impurities found in our sources of water mostly occurs as are result of surface or under or under ground pollution from sewages through poor drainage within our environment. The situation that normally result into diseases like epidemics of Gastro-interitis, typhoid and others. Food contamination often occurs as result of poor environmental condition, several diseases e.g cholera are transmitted through this route. (Lucas and Gilles 1984) Malaria is one of the commonest disease associated to poor environment as mosquitoes which are vectors of transmission breed in stagnant water and bushes within such environments (Oluwande 1983).

## TABLE

### 4.2.1 Availability of Waste Facilities

QUESTIONS	NO. OF RESPONSES		
	YES	NO	TOTAL
Availability of waste Depot	70% 80	30% 20	100% 100
Availability of Dust bins for collection	50% 70	50% 30	100% 100
Availability of Toilet facility and proper usage	60% 70	40% 30	100% 100

**Source:** Compiled by the author

The above table indicate that about 70% of the respondents have waste depot in their ward while 30% respondent said they don't have the depot within their ward.

Also in the above table 50% of the respondents have waste collection materials in their houses for use before they are taken to the depots, 50% do not have dust bins in their houses for waste collection.

Through the above table we are able to realize that 60% of the respondents have toilet facility in their houses, while 40% of the respondent do not have the toilet facilities in their houses.

**TABLE 4 2.2**

**Public awareness about the health Hazards associated to solid waste / sewage polluted environment.**

QUESTIONS ON DISEASES AWARENESS	NO. OF RESPONSES		
	YES	NO	TOTAL
Gastro-Interitis	90% 80	10% 20	100%
Typhoid Fever	70%	30%	100%
Malaria	80%	20%	100%

**Source:** Compiled by the author

References to the above table it indicate that about 90% of the respondent to this questionnaire are aware Gastro-Interitis occur due to poor condition of surrounding environment while 10% did not know that a polluted environment can be liable to cause diarrheoa diseases.

Through the above table about 70% of the respondents are aware of typhoid infection liable to occur through waste/ sewage polluted environment while 30% responded to non-awareness.

From above table 80% of the respondents are aware that malaria fever can be caused by waste / sewage polluted environment though 20% respondents said no to the question.

TABLE 4.2.3

Accessibility to Environmental Pollution Education.

MEDIA ACCESSIBILITY FOR ENVIRONMENTAL POLLUTION EDUCATION	NO. OF RESPONSES		
	YES	NO	TOTAL
Radio programmes on environmental education	60% 80	40% 20	100% 100
Television programmes on environmental education	50% 80	50% 20	100% 100
Personal contact (through enlightenment campaigns.)	40% 50	60 50	100% 100
Published materials on environmental education journals and others	50% 70	50% 30	100% 100

**Source:** Compiled by the author

According to table 4.2.3 about 60% of the respondents have access to Radio programmes on environmental pollution hazards education. While 40% do not listen or have no accessibility to the programme.

Television literacy awareness has 50% respondents accessibility. While 50% has no accessibility to television programme on environmental pollution hazards education.

On published materials like journals books and magazines in the above table about 50% of the respondents have access to journals and other books while 50% respondent can not either read, or do not have access to this medium.



Plate 4.1 Showing a very big waste depot at Unguwan Jankidi, Surrounded by houses with shallow open wells, it often cause under ground water pollution during rainy season. Source: Fieldwork by the Author.



Plate 4.2 This is a picture of poor drainage system at Unguwan Gwari BCGA Kontagora. Source: Fieldwork by the Author.





Plate 4.3 Showing indiscriminate waste depot at Unguwan Kudu Opp. Town field inside Kontagora town.

**Source: Fieldwork by the Author.**



Plate 4.4 This is a picture of soak away pit with waste deposited within its surrounding at Sabon Gari Unguwan Arewa Kontagora.

**Source: Fieldwork by the Author.**

## 4.2 DISCUSSIONS

Structured interviews, pictures of some waste depots, drainage sewages and other observations revealed several environmental pollution problems encountered by the Kontagora Local Government and Kontagora town at large. In most of dwelling houses latrine are available but are poorly use as can clearly seen in table 4.2.1 through observations it also reveals that most public places like market squares e.g Sabon Kasa~~wa~~ (modern market) along Lagos Road and (Ibeto motor parks, Zuru motor parks) lack sanitary amenities like toilets and urinals for public use. These condition leads to indiscriminate defecation on open land and the bushes surrounding the town, the consequence of which may lead to choleras epidemics.

Pictures of waste / sewage collected from four wards of the town are evidence of the health consequence faced through wasted / sewage environmental pollution, Data's received through 500 questionnaires as analysed ~~in~~ tables 4.2.1, 2.2 and 2.3 indicate some diseases and environmental education awareness to certain level but peoples attitude toward the environment is very poor, the situation that leads to poor waste / sewage management.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.

#### 5.1 SUMMARY

The purpose of this project was to identify the problems associated with the present condition of environmental pollution due to poor sewage and solid waste disposal in Kontagora Local Government. The researcher concentrated on the four wards of Kontagora town. Picture of waste depot and poor sewage drainages are collected to examine the extent of the pollution problem. Data's were also collected through questionnaires on availability of toilet facility and environmental education awareness, the data collected were coded, built in to percentages for simple analysis.

#### 5.2 CONCLUSION

From the case study it is evident that there is environmental pollution problem in Kontagora town due to <sup>inadequate</sup> solid waste and sewage disposal system <sup>coupled with a fact that the wastes are irregularly collected from the few</sup> especially that of irregular collection of waste from the few existing communal waste depots which become a heap pile of mountainous wastes.

This immensely contributed to waste dump around or even within the residential dwellings, there by deteriorating and degrading the aesthetic scenery of the environment and cause the blockage of existing gutters and drainages. This poses a serious health risk to the deteriorating environmental quality in Kontagora metropolis.

Though going by the observations in table 4.2.1 dust bins and other waste collecting materials are available but the people still bring out the waste collected from their homes and dump them in open



spaces around their residence or in nearby gutter or road side which cause more devastating problems during rainy seasons for blockages of water ways which consequently cause flood.

Infact there is that general awareness of the side effects of improper waste and sewage disposal causing pollution and its consequence on health going by the responsible percentage in table 4.2.2 but the attitude of people toward environmental protection is still very poor.

### **5.5.3 RECOMMENDATIONS**

Based on the findings of this study the researcher has the following recommendation to make in order to prevents and control future waste / sewage environmental pollution.

- i. All existing heaps pile waste dumps around the dwellings houses should be cleared immediately to avert health hazard and prevent pollution.
- ii. Each house hold should arrange for adequate domestic waste disposal system so as to ensure proper sanitation and for easy collection by the local government waste collection crews.
- iii. Environmental protection Board should be established at the Local Government level and charge with the responsibility of waste management and other environmental protection activities. The board can make a blanket charge on both who make house basis arrangement on waste collection and also oversees the general legal/enforcement department which should also take care of general compliance and punishment of defaulters.

- iv. The Local Government should give serious attention to drainages system, where there are non efforts should be made to construct them and where they exist and are block they should be cleared and clean completely.
- v. The Kontagora Local Government should reviews its present policy on funds allocations so as to provide the health department with enough funds to adequately handle the waste / sewage management in the area.
- vi. The Local Government should build public toilets and Urinals in public places like market squares motor parks and other public places for public use in such places.
- vii. The Local Government should embark on Environmental Education / Mobilization campaign to enlighten and create awareness about environmental protection.
- viii. The Local Government should equip all the Health facilities with standard materials to combat the diseases epidemics.
- ix. The Local Government should make sanitary dust bins available to the public to purchase for every house hold to store their waste before final disposal at waste depot.
- x. The local Government should create waste depot at strategic places for the community to prevent indiscriminate disposal in and around the town.

## **APPENDIX A**

**FEDERAL UNIVERSITY OF TECHNOLOGY MINNA  
DEPARTMENT OF GEOGRAPHY  
PGD ENVIRONMENTAL MANAGEMENT  
RESEARCH PROJECT WORK**

**TOPIC: CONSEQUENCE OF ENVIRONMENTAL POLLUTION ON  
HEALTH.**

**A CASE STUDY OF KONTAGORA LOCAL GOVERNMENT  
KONTAGORA.**

Sir / Madam,

### **QUESTIONNAIRES ON CONSEQUENCES OF ENVIRONMENTAL POLLUTION ON HEALTH.**

I am a student of the Federal University of Technology Minna, undertaking a research project, titled consequences of Environmental Pollution on Health in Kontagora town Kontagora Local Government.

The questionnaire is aimed at obtaining some useful and relevant information from you on the consequence of environmental pollution on Health.

Please Sir / Madam kindly answer the following questions as honest as possible to enable me complete the research project, your information will be treated confidentially. Your responses will be wisely used for the purpose it is made for.

Thanks for your co-operation.

**Alhassan Mohammed.**

	i. Dysentry ii. Cholera iii. Worms infestation.		
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Thank you for your co-operation.

## APPENDIX C

### QUESTIONNAIRE PART 2

S/NO	QUESTIONS ON ACCESS TO ENVIRONMENTAL POLLUTION EDUCATION	YES	NO
1.	Do any Health team ever visit your premises on environmental pollution enlightenment campaign and its hazards		
2.	Have you ever receive or listen to Radio Broad Cast programme on consequences of environmental pollution on health.		
3.	Have you ever receive television programme on environment pollution related diseases.		
4.	Do you ever listen to contact or group discussion about environmental pollution on health		
5.	Do you ever read from any book or magazine about environmental pollution on health		

Thank you for your usual co-operation.

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