

Public Information about Environmental Pollution and their Effects

Fereshteh Bashiri

Abstract— In this research, we have focused on the different pollution on the environment. We have defined environmental pollution and their effects with air pollution, water pollution, noise pollution, light pollution, soil pollution, oil pollution, marine pollution, solid waste, industrial waste chemical pollution and radioactive waste. They can be caused real harm to human health and nonhuman nature. The objective of this paper has been tried to explain and consider this pollution for training the people who had less information about these items. Informing people about hazards environmental pollution and offer ways to solve or reduce this problem is the main item that must we have cared. Increasing information can be caused elimination of these pollution sources with control and prevent. Increase public information about this problem can be helped to people to understand more and improve their knowledge. Then we can introduce the easiest way for solving this problem.

Index Terms— Environment; pollution; knowledge; health

I. INTRODUCTION

Treat the earth well. It was not given to you by your parents .It was loaned to you by our children (Kenyan proverb). In twentieth century, population and their activities are raising so fast. This pollution in the environment can be caused harmful effect to public health. Pollution problems were more in the developing countries that hadn't been adequate implementation to reduce these problems. They have not provided policies and rules to stop attribute the pollution on the environment. This matter can be affected to economic growth and profits; also it has been a lot of expenses for public health. In these years human activity especially construction contributed in the industrial and development countries that have huge agricultural production. However, most of the pollution problems appeared during the construction. Unfortunately these

sources of pollution increase and have significant impact on the environment [2]. Pollution is the introduction of contaminants into an environment that cause instability, disorder, harm or discomfort to the ecosystem. It can be chemical substance or energy. Recently the place that we are living is so polluted and needs to survey. For reaching this goal knowledge and corporation is very important. These days most of the physical activities can release different pollution in the environment. Hazardous substance can enter to environment by accident and cause adverse effect to human health. As far as we know the contribute of these pollutant to the environment can increase mortality and illness [3]. Environmental pollution is a main world concern these days. As we know that excessive levels of environmental pollution can cause incredible damage to animal, plant and human health. All types of pollution can have different impact to the environment that is consist serious cancer and disease [4]. Basically our environment is composed of atmosphere, earth, water and space. In absence of pollution, it remains clean and enjoyable. On account of various activities of man, the composition and complex nature of environment gets changed. The result of unnatural elements entering the environment is called pollution that unfortunately, humans are usually at fault. But even though there has been a lot of damage done to the environment by pollutants, that doesn't mean it is "game over" for Earth. There are two ways to tackle the problem. First clean up what we can, and second take action to prevent further pollution [5]. We need individual attention to environmental pollution. Having knowledge about different type of pollution and its effect can obtain by increase public information. The environmental tax and pricing for standards can control the pollution and have a social welfare with increasing of quality of life and reduction the level of activities with high risk for environment [6]. As we know all nations have their own ministry or department to implement effectively legislation related to control of pollution. At moment there are separate ministry looks after all problems related to pollution. In fact all nations have their own department with effectively legislation to control of pollution. For reducing them we need more knowledge of engineering and technology. There

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Fereshteh Bashiri, Faculty of Engineering University of Malaya, Kuala Lumpur, Malaysia

are different types of pollution that in this paper tried to discuss about them for increasing the public information and give suggestion for the easiest and best way for controlling or reducing them. This matter is very important because of the environment. Human and nonhuman nature is living in the environment and it is our business to care about it that without a clean environment we don't have safe place for living. This can be achieved by informing people about the hazards of environmental pollution and offering ways for improving the environment. In this paper, we will investigate the better life for the people toward with less pollution. They will stop to produce them or control by the easiest way.

II. LITERATURE REVIEW

Environmental pollution is classified into various groups that we introduce one by one here and try to give easy suggestion.

A. Air Pollution

Release of chemicals particulates either solid or liquid into the atmosphere is called air pollution. Such as (CO), (SO₂), (CFCs) and (NO) that are produced by industry and motor vehicles. Air pollution comes from both natural and manmade sources. The most important effect of air pollution is ozone depletion. Ozone layer can protect the Earth's surface from the sun's UV radiation. This layer can damage easily by the pollutants in the air. Global warming will appear Public Information about Environmental Pollution and their Effects in this problem too, that can change the temperature of the Earth. High carbon dioxide can cause this problem. Acid rain is another problem that can happen because of SO₂. The effect of this disaster pollution can be toxicological and epidemiological [7].

B. Water pollution

By the release of waste product and contaminants into surface runoff into river drainage system, leaching into groundwater, liquid spills, waste water discharge, eutrophication and littering. Water pollutants are entering water sources through channels and pipes. Polluted water is a serious threat to public health because of transmission of bacteria. There is water pollution in less developed country and countries that are in time of war [8].

C. Soil pollution

This occurs when chemicals are released by spill or underground leakage. Among the most significant soil contaminants are hydrocarbons, heavy metals, herbicides, pesticides and chlorinated hydrocarbons. Soil pollution is as a result of harmful insecticide and pesticide. It can cause by acid rain, fuel leakage and

unhealthy waste, leakage of sanitary sewage, pesticide, fertilizer, harmful irrigation, industrial waste and harmful gasses [9].

D. Noise pollution

Excessive noise level that generated by industries, machinery and vehicles can cause noise pollution which create mental problem, irritation and headache [10].

E. Metal pollution

In development and industrial countries the construction of highway contributed. Environmental pollution especially metal pollution appeared after construction. Road transportation can release a large amount of metal in the air, water and soil. The main metal pollutants are Pb, Cu, and Zn [11]. There are 17 elements that are classified in toxic metals. This is the maximum or permissible tolerable limit for a human. The important toxic metals are: Be, Os, Pt, Hg, Tl, V, Te, Co, U, Se, Cd, Pb, As, Cr, Ni, Zn and Mn.

F. Oil pollution

Oil is combination of chemical substance with hydrocarbons that can release to the environment by transportation by ships and vehicle on the oceans, seas and soil. Also leaching on the surface can pollute the environment too. It can be harmful and poisonous for natural living things on the sea and can cut the oxidation. It takes a long time to decomposition oil in the environment.

G. Light pollution

Light pollution is the unnecessary or illogical use of artificial lights that can be very harmful for living things. Some adverse health effects on human include reduce concentration, high blood pressure, breast cancer, stress, increase melatonin hormone, depression, anxiety and decrease sexual function. The light scatters in the eye because high contrast called glare. That is very dangerous and can cause accident [1].

H. Solid waste

Solid waste means any refuse, sludge and garbage from water supply, waste water treatment plant and other material such as solid and agricultural operations. Solid waste can produce in large quantity especially in the house. It can remove during waste water, mechanical process, treatment plant. The things that we throw away are in incinerators or dumped in the landfill. But both of them can damage environment. The amount of solid waste can control by reducing dangerous substances in product. Improve the methods of manufacturing and culture of consumer can be useful for controlling this matter.

I. Chemical pollution

There are near 5 million chemicals in technological and development countries. Various industries are emitting the toxic pollutants that are greater threat to the environment. They can insert to chain food and effect to human and nonhuman living verysoon that are not compensable [7].

J. Marine pollution

Human activities can cause to enter some pollution to the water source such as sea and ocean that can be harmful or stop living of creatures in the water. Entering heavy metals, pesticides, sewage, thermal pollution and etc are in this category. Deplete water of oxygen, algal blooms, and release toxicant which are harmful for marine environment are the effect of this pollution to the environment [7].

K. Radioactive waste

Radioactive waste is waste that contain radioactive and produce by nuclear power and technology such as research and medicine. Government agency is responsible for protecting human health and environment. Use nuclear fuel can be treated as one of the important source in waste. Nuclear power takes full responsibility and cost into the product. But all radioactive wastes can decay to the elements that are nonradioactive [13].

L. Industrial waste

Hazardous waste can produce in many industrial countries. Transport and export illegally of thesehazardous waste to the developing country and disposed them without regard to environment and health issue can be huge disaster [14].

III. EFFECTS OF ENVIRONMENTAL POLLUTION

A. Effect of air pollution [4]

1. Reduce lung function and respiratory disease
2. Asthma, damage immune system, cardiovascular problem, cancer and headache
3. Irritation of eyes, nose, mouth and coughing

B. Effect of water pollution [4]

1. Parasite in the body
2. Infection of digestion system
3. Diarrhea, hepatitis, vomiting, cancer, hormonal problem and stomach ache
4. Damage of nervous system, kidney, DNA and liver

C. Effect of soil pollution [4]

1. Cancer, brain damage, damage of central nervous system, headache, nausea, fatigue, eye and skin irritation

2. Kidney damage by mercury
3. Food problem because of crops grown in polluted soil

D. Effect of noise pollution [4]

1. Lack of concentration, fatigue and blood pressure
2. Temporary deafness
3. Abortion

E. Effect of light pollution [1]

1. Decrease of melatonin hormone
2. Fatigue and depression
3. Eye problem and glare
4. Change life cycle
5. Increase breast cancer

F. Effect of metal pollution [11]

1. Influenced the food
2. Affect to living things in an indirect way
3. Itai-Itai disease that cause because of cadmium and can effect to kidney and softening of bones
4. Minamata disease cause by mercury can have some problems like damage to hearing and speech and muscle weakness.

G. Effect of oil pollution [11]

1. Stop oxidation for marine
2. Soil pollution
3. Piousness for natural living things

H. Effect of solid waste [15]

1. Rats and flies can transmit danger disease to human and animals
2. Pollute the grand water
3. Increase mischievous animals

I. Effect of chemical pollution [16]

1. Noise, throat and eyes irritation
2. Allergic skin reaction
3. Difficult breathing, nausea and dizziness
4. Damage liver, damage kidney and cancer

J. Effect of marine pollution [17]

1. Reduce the level of oxygen
2. Incapable of performing necessary function
3. Sea birds can be affected by marine pollution
4. Enter pathogens and bacteria to chain food
5. Present dilapidated condition

K. Effect of radioactive waste [18]

1. Effect to lungs and digestion system
2. Concentration in one organ such as liver
3. Various type of cancer
4. Fever, nausea, diarrhea, decrease immunity and

death

L. Effect of industrial waste [19]

1. Block the intended effect of endogenous hormone
2. Increase lung cancer
3. Reduce sperm count
4. Toxicity for air, water and land

IV. PROMULGATION OF THE BASIC LAW FOR ENVIRONMENTAL POLLUTION CONTROL

The law for environmental pollution control was enacted in 1967 for coordinated government policy and environmental pollution legislation. This legislation was prepared for pollution control measures, from relevant ministries, based on the report to the ministry of health and welfare. These laws can definition of environmental pollution, resident, responsibilities of business, government at the national or local levels, describe the basic strategies for preventing environmental pollution and provide suitable structure of legislation for environmental pollution [20]. Table 1 tried to introduce the understandable major cause and major symptoms of environmental pollution. With raising the public information about environmental pollution we can have the environment with less pollution.

TABLE1: CATEGORIES OF POLLUTION [20] CATEGORY

Pollution	Major cause	Major symptoms
Air pollution	Smoke, dust, SO ₂ , NO ₂	Bronchitis, asthma
Water pollution	Sewage, sludge, agricultural chemical	Poisoning, odors
Soil pollution	Heavy metal, arsenic	Toxic of crops
Noise pollution	Factories, construction, traffic	Insomnia, headache, depression
Metal pollution	Mn, Cd, Pb, Se, Cr, Ni	Itai-Itai, Minamata
Oil pollution	Transportation	Poisonous for marine, mortality for living things
Light pollution	Artificial light, excessive light	Decrease melatonin hormone, mortality, stress, insomnia

V. ROLES AND RESPONSIBILITY FOR RESPONSE TO HEALTH PROBLEMS BY ENVIRONMENTAL POLLUTION

We describe some roles and responsibility for response to health problems that can cause by environmental pollution.

A. National Government

1. Ensure that industry can control the pollution and promote health.
2. Warning on source of pollution and provide information about it.
3. Organize the research group.

B. Regional and Local Government

1. Regulate industries and develop control measurement.
2. Eliminate the contaminants of pollution.
3. Promote local industries.

C. Companies and Industries

1. Identify and monitoring of pollution.
2. Take action after identification.
3. Install treatment of equipment.

D. Scientist and Researchers

1. Find the relationship between illness and pollutant.
2. Diagnosis and treatment of pollution related to the health.

VI. SUGGESTION FOR REDUCE ENVIRONMENTAL POLLUTION

- 1) Standards for environmental pollution
- 2) Regulation for emission
- 3) Regulation for land use
- 4) Monitoring and measurement
- 5) Prevention program
- 6) Compensation for pollution victims
- 7) Proper basis for environmental pollution policy
- 8) Improve public education about environmental pollution
- 9) Advice the government on matters for prevention and control
- 10) Encourage people to enhance their information about their pollution
- 11) Look after the environment like your family
- 12) Improve management of environment
- 13) Reuse of disposed material and reduce consumption of raw material
- 14) Labeling and standard packaging for hazardous waste
- 15) Follow the rules and standards
- 16) Pollution measurement in local and regional area
- 17) Environmental assessment
- 18) Pollution prevention research
- 19) Advertisement about clean and safe environment
- 20) Award for environmental activities

VII. CONCLUSION

In this work, we investigated understanding the types of pollution could help people to raising their knowledge. With high information people could challenge with the problem and find the best solution.

Trying to reduce or eliminate the pollution matters in the environment was in the first line of government's policy. Earth was safe and healthy with people's participation. High responsibility for this matter can be caused by investigation and control. There was a straight relationship between human health risk and environmental contaminant. Hope with changing people's manner and behavior could have a safe and beautiful environment.

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REFERENCES

1. F. Bashiri, C. Rosmani, Light Pollution and Its Effect on the Environment, Int. J. Fund. Phys. Sci. vol.4, pp. 8, 2014.
2. Marilena K., Elias C., Environmental Pollution vol. 151, pp.362, 2008.
3. Ehrlich, P. R., Ehrlich, A. H., and Holdren, J. P. (1977). *Ecoscience: Population, Resources, Environment*. San Francisco: W. H. Freeman, P. 536. Retrieved November 22, 2008 from Questia. Com
4. Williams J., Baumol and Wallace E. Qates, Swed. J. of Economics, pp.42, 1971.
5. C. S. Rao, Environmental Pollution Control Engineering; John Wiley and Sons, 1992.
6. P. Jeffrey, F. Ruth, P. Weiner and Arne V., Water Pollution, 1998, Ch. 3.
7. U. Deshmukh, Soil Pollution Cause and Effects, February 1. 2012, <http://www.buzzle.com>.
8. Research Clinic, Environmental Pollution, African Traditional Herbal, (2014)
9. D.HAN, Effect of Heavy Metal Pollution of Highway Origin on Soil Nematode Guilds in North Shenyang, China, Journal of environmental Sciences 21 (2009) 193-198.
10. Urban Environmental Pollution Sheraton Centre, Toronto, Canada 2014, <http://www.uepconference.com>
11. Nuclear Information and Resource Service, Radioactive waste project. Retrieved September 2007.
12. M.Eshtiaghi, R. Yarahmadi, J. Nouri, An Overview of the Importance of Waste Management Industrial and Necessity Creation of Industrial Ecology as the Environmental Pollutants Reducing in the World and Iran, Kuwait Chapter of Arabian Journal of Business and Management Review Vol.3, No.7; March 2014.
13. J. Jeffrey Peirce, P. Arne Vesilind, Ruth Weiner. Environmental Pollution and Control, 4th Edition, Butterworth-Heinemann, Jan 15, 1998-Technology and engineering 1998.
14. K. Manfred. Chemical Pollution, 2009, http://www.manfredkaiser.com/chemical_pollution.html.
15. Raunek, Effects of Marine Pollution on the Sea, 2010, <http://www.brighthubengineering.com/seafaring/37397-effects-of-marine-pollution-on-the-sea>.
16. Goldstein. Inge and Martin Goldstein. How much risk? Oxford University Press 2002. ISBN 0-19-513994-1
17. S. Lupica, The Bad Effects of Industrial Waste, 2011, http://www.ehow.co.uk/info_8417556_bad-effects-industrial-waste.html.
18. Japan's Experience in Public Health and Medical Systems, Environmental Pollution Control Measure, Ch. 6, pp. 140. http://jicari.jicari.go.jp/IFIC_and_JBICISudies/english/publications/reports/study/topical/health/pdf/health_08.pdf



I am Fereshteh Bashiri. I was born in Iran 37 years ago. I was graduated in the field of environmental hygiene (bachelor degree) and safety and health environment (master degree) from University Malaya. I had one paper that published last year and try to write a proposal about control the bad odors in sewage treatment