

ANALYSIS OF ENVIRONMENTAL POLLUTION POLICIES DUE TO ECONOMIC AND TECHNOLOGICAL DEVELOPMENTS

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ABSTRACT

Environmental pollution is a consequence of economic and technological developments that exceed the tolerance of ecosystems, increasing the amount of pollutants in the air, water and soil. This article discusses the negative impacts of environmental pollution, such as ecosystem damage, poor health, and loss of natural resources. Contributing factors include greenhouse gas emissions, industrial waste, and air and water pollution. The literature review provides an insight into the concept of pollution and environmental policies implemented by the government. The results and discussion describe the types of pollution (air, water, land) and the factors that cause them, with a focus on their impact on human health. SWOT analysis identifies strengths, weaknesses, opportunities and threats in overcoming environmental pollution. Several government regulations are also described as efforts to control pollution. Ways to overcome the impacts of pollution include the 4R principles, reforestation, bioremediation, land rehabilitation and coastal reclamation. Public awareness, waste management, environmentally friendly technology and government policies are also considered important. The SWOT analysis highlights challenges in regulatory enforcement, global coordination, and dependence on polluting industries. The conclusion emphasizes the urgency of awareness and collective action to overcome environmental pollution. This article details health implications such as respiratory disease, eye irritation, and risk of premature birth. Prevention efforts include public awareness, waste management, clean technology, and international collaboration. The threat of climate change and resistance to change were identified as barriers. In conclusion, decisive action is needed to protect the environment and human health.

Keywords : Policy, Environmental Pollution

INTRODUCTION

Environmental pollution is a major change that occurs in environmental conditions caused by economic and technological developments that exceed the threshold

limit of ecosystem tolerance, thereby increasing the amount of pollutants in the environment. Environmental pollution can occur due to several factors, such as increasing population, uncontrolled natural exploitation

activities, and industrialization that is not managed properly. Environmental damage due to familiar pollution can have an impact on reducing the environment's ability to meet human needs. Apart from that, environmental pollution can trigger various other bad impacts on humans, such as disease and natural disasters, one of which is due to human negligence. Environmental pollution is divided into several types, including air pollution, water pollution and land pollution. To solve the problem of environmental pollution, of course we have to know where the source of this pollution comes from, how the pollution process occurs, and the consequences and solutions that can be implemented. Environmental pollution that causes negative impacts from human activities on ecosystems can result from several factors, including greenhouse gas emissions, industrial waste, and air and water pollution. Pollution that can threaten environmental sustainability, human health and biodiversity. Environmental pollution causes detrimental impacts on the environment and humans, such as ecosystem damage, poor health, and loss of natural resources. Therefore, it is necessary to overcome and prevent environmental pollution, such as good waste management, use of environmentally friendly technology, and public awareness of the importance of protecting the environment.

LIBRARY STUDY

Pollution is the entry of a pollutant which results in a change in a condition from its original form to a worse condition. As stated by Miler (2004) in Mukhtasor (2007), pollution is any addition to air, water, soil or food that endangers the health, resilience or activities of humans and other living organisms. Meanwhile, according to Palar, H (2012), the environment is defined as a medium, place or area in which there are various forms of activity originating from the ornaments that make it up. So environmental pollution can be defined as unfavorable changes in the environment, either due to human actions, changes in patterns of energy and material use, radiation levels, physical and chemical materials and the number of organisms.

Environmental pollution policy is a series of steps and rules established by the government to control and prevent environmental damage due to human activities. Several policies related to controlling pollution and environmental damage include:

1. The field of Pollution Control, Environmental Damage and Conservation of Natural Resources and the Environment has the task of formulating, compiling and implementing technical policies in the field of control, pollution, environmental damage and conservation of natural resources and the environment as well as their implementation in controlling

pollution and environmental damage in a sustainable manner .

2. The Division of Pollution Control, Environmental Damage and Conservation of Natural Resources and the Environment carries out the function of preparing the Environmental Quality Index. As well as having the task of formulating, compiling and implementing technical policies in the field of pollution control, environmental damage and conservation of natural resources and the environment as well as their implementation in controlling pollution and environmental damage in a sustainable manner.

Government Regulation No. 41 of 1999 concerning Air Pollution Control; Attachment - Minister of Environment Regulation No.12 of 2010 concerning Implementation of Air Pollution Control in Regions. Government Regulation No. 82 of 2001 concerning Water Quality Management and Water Pollution Control. Government Regulation No.27 of 2012 concerning Environmental Permits.

METHOD

The study method used is the SWOT Analysis approach (*Strengths, Weaknesses, Opportunities, Threats*). SWOT analysis is a systematic analysis approach of various factors to form a strategy (Kurniasih et al., 2021).

RESULTS AND DISCUSSION

Environmental pollution is the entry or entry of living creatures, substances, energy or other components into the environment by human activities so that it exceeds the environmental quality standards that have been determined (Environmental Law No. 32 of 2009). This environmental pollution needs to be handled seriously by all parties, because environmental pollution can cause disruption to health and well-being and can even have an impact on the human soul (Luthfi, Achmad. 2004).

Environmental Pollution Factors

Factors that cause environmental pollution as a by-product of human actions include (Luthfi, Achmad. 2004):

- a) Industrialization Factors.
- b) Mining, transportation, refining and processing of materials to produce usable goods.
- c) Mining, transportation, refining and use of fuel to produce energy.
- d) Waste residues are produced as by-products during the above processes.
- e) Urbanization Factors.
- f) Clearing forests for villages, industry and transportation systems.
- g) Hoarding or piling up of waste/garbage and by-products during the above processes.
- h) Rapid population development/growth.
- i) Increased need for shelter/housing.
- j) Increasing food needs and energy needs.

- k) Increased need for consumer goods and materials for living.
- l) Lifestyle Factors
- m) Excessive use of necessities until wasted
- n) Demand for luxury
- o) Waste of energy

Types of Environmental Pollution

Environmental pollution is divided into 3 types

1. Land pollution

Soil pollution occurs because pollutants enter the soil layer so that the quality of the soil decreases. These pollutants can come from oil spills, leaks of liquid waste, pesticides that are used excessively, liquids from landfills, as well as other substances, such as arsenic, iron, cadmium, chloride, chromium, fluorine, mercury, lead, , nitrate, silver, selenium, and sulfate.

2. Water pollution

Water pollution occurs due to pollutant substances entering water sources, such as insecticides, dirt, waste, fertilizer and rubbish. Polluted water will smell, be cloudy and colored, making it unfit for consumption. If consumed, this water will harm your health.

3. Air pollution

Air pollution occurs due to the presence of pollutant substances that pollute the air. These pollutants can be produced from the use of certain tools, such as air conditioning, motorized vehicles, *etchair dryer*. Apart from that, pollutants can also

be produced from activities carried out by humans, such as burning rubbish, using pesticides to kill pests on agricultural land, and factory activities that cause smoke.

Impact of Environmental Pollution

Environmental pollution can have a negative impact on human health. The following are some of the impacts of environmental pollution on human health that can occur:

- a) Causes germs of disease, such as respiratory tract infections, asthma and lung cancer.
- b) Makes eyes red and irritated.
- c) Skin itchy and scaly.
- d) Causes disorders of the respiratory system, such as shortness of breath, coughing, and ARI.
- e) Causes disorders of the digestive system, such as diarrhea and nausea.
- f) Causes disorders of the nervous system, such as headaches and fatigue.
- g) Causes disorders of the reproductive system, such as infertility and fetal abnormalities.

Air pollution can cause a variety of adverse health symptoms. The following are some of the symptoms that arise due to air pollution:

- 1. Asthma
Exposure to air pollution can trigger asthma attacks in pre-existing sufferers.
- 2. Cough

Air pollution can cause coughs that are persistent and difficult to treat.

3. Difficulty Breathing

Air pollution can cause breathing difficulties, especially in people with pre-existing respiratory disorders.

4. Eye Disorders

Red eyes and irritated nose are the first symptoms of exposure to air pollution with large and small particles.

5. Heart Disease and Stroke

Air pollution can cause heart disease and stroke by damaging blood vessels and triggering inflammation.

6. Premature Birth and Low Birth Weight

Pregnant women who are exposed to air pollution can experience pregnancy complications, such as premature birth and low birth weight.

7. Death

Short-term and long-term exposure to polluted air can shorten life and cause death.

Environmental pollution can also impact human health indirectly, such as reducing the quality of water and land resources which can affect human health. Therefore, it is necessary to make efforts to prevent and control environmental pollution to maintain human and environmental health.

Ways that can be taken to overcome the impact of environmental pollution

The following are several ways to overcome the impact of environmental pollution on human health:

1. Applying the 4R principle (Reduce, Reuse, Recycle, Replace) to reduce the amount of waste produced and reduce the use of hazardous materials.
2. Carrying out reforestation to restore forest function and reduce air pollution.
3. Carrying out bioremediation to clean waste from contamination using microbes or plants.
4. Carry out land rehabilitation to restore the land ecologically.
5. Carrying out beach reclamation to restore the physical environment so that it can be used again.

Apart from that, it is also necessary to make efforts to prevent environmental pollution, such as good waste management, use of environmentally friendly technology, and public awareness of the importance of protecting the environment. By carrying out these efforts, it is hoped that we can reduce the impact of environmental pollution on human health and the environment.

SWOT analysis

Strengths (Strength):

- a) Awareness and Advocacy
Namely by increasing global awareness and advocacy on environmental issues,

encouraging the potential for collective action.

- b) Technology advances
Namely providing tools to monitor and overcome environmental pollution.
- c) Regulatory Framework
There are environmental regulations and frameworks in many regions to curb pollution.

Weaknesses:

- a) Enforcement Challenges
Weak enforcement of environmental regulations in certain areas, causing pollution to continue.
- b) Lack of Global Coordination
Limited global coordination hampers efforts to overcome cross-border environmental challenges.
- c) Dependence on Polluting Industries
Economic dependence on industries that contribute to pollution may hinder a rapid transition to cleaner alternatives.

Opportunities:

- a) Environmentally Friendly Innovation and Technology
Aims to reduce the impact of environmental pollution.
- b) There is community involvement
Increasing public interest in sustainability creates opportunities to increase engagement and support for

environmentally friendly initiatives.

- c) International Collaboration
Potential for increased international collaboration to develop and implement effective anti-pollution measures.

Threats:

- a) Impact of Climate Change
Increasing environmental problems such as climate change increase the severity of the impact of pollution.
- b) Resource Depletion
Continuous pollution that causes the depletion of important resources and ecosystems.
- c) Resistance to Change
Resistance from industry and society who are reluctant to adopt environmentally friendly practices, thus hindering progress.

CONCLUSION

Environmental pollution has occurred a lot and is very detrimental to humans and the surrounding environment. Environmental pollution is caused by human activities that do not pay attention to its impact on the environment. Environmental pollution also has an impact on human health and can even cause death. Environmental pollution is divided into 3 types of pollution, namely land pollution, water pollution and air pollution. To reduce environmental pollution, people must immediately become aware and

understand the environmental pollution that has occurred and correct or eliminate behavior that can cause the environment to be polluted. Firm action is needed for perpetrators of environmental pollution, so that pollution does not get worse and the environment can be saved. Because by keeping the environment clean from pollution, human life and other ecosystems will become healthier and far from threatening dangers.

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