



# Environmental pollution and its impact: A study on waste management

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## ABSTRACT

Waste management concentrates on being able to overcome the waste problem, because the problem of waste is no stranger to hearing, so to be better we must be able to control bad behavior, namely littering. Then this is where we live and also where other living beings live, so we must take care of each other in good condition because the environment will affect all aspects. And a good environment can be seen from the cleanliness of the environment itself, such as clean air, cool and clear water, then managing waste properly and being able to plant more trees so that the environment can re-green the area. However, garbage still destroys the surrounding environment. For the development of a healthy environment, we must be self-aware to protect our homes by minimizing the use of plastic and for waste-producing companies to be able to manage it properly, not to damage the environment by disposing of its waste carelessly. Because to deal with waste management, this company aims to utilize B3 waste. and non-B3. and better to protect the environment using materials that can be recycled.

**KEYWORDS:** environment; recycle; safety; waste

## 1. Introduction

As we know that waste management is an important sector for humans. where this sector is very influential for living things on this earth. where we see that this country's waste management does not care about the local environment, so there is a sense of wanting to improve or change for the better. so that this sector can improve and because we don't know maybe in the next 10 years or even we ourselves will not be able to feel fresh air and a clean environment.

Therefore, by making this at least we can bring a little change in the waste management sector. What we will explain in this journal is about waste management and overcoming these risks. So what is waste management? Waste management is a method/ method/ system for handling waste/ waste from buildings/ offices by prioritizing the principles of safety, health & environment.

Even though the threat is spreading fast, it is important that we take care of the environment such as disposing of waste at collection and disposal (TPS). Because local areas are required to be responsible for protecting public health, waste collection is a challenge for workers, because not a few of them are increased exposure to the COVID-19 virus through house-to-house contact. This condition greatly reinforces the importance of local waste management infrastructure, but unlike the case with medical workers, they often

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come in any news because of their bravery, but these waste officers are seen as workers who are seen as contributing either in routine or emergency situations.

One of the liquid waste management is a batik factory which has cultural arts there, waste in liquid form produced by the batik industry has started at the stage of processing fabrics to coloring. In this process, a lot of synthetic dyes are used and the craftsmen prefer to use synthetic materials rather than natural materials because of their advantages (Bezama and Agamuthu, 2020).

Because synthetic colors are more stable than natural dyes. But synthetic dyes are materials that are difficult to decompose in the environment so that they can become pollutants and cause disturbances in the balance of the aquatic environment. Then in synthetic dyes containing hazardous chemicals such as heavy metals, in metals there are materials such as chromium (Cr), lead (Pb), nickel (Ni), copper (Cu), and manganese (Mn). This compound is very dangerous for living things because it can cause cancer.

To meet the quality standards that have been set, there are several ways to treat batik liquid waste, such as processing can be done by chemical, physical or biological methods. Biological treatment can be carried out aerobically and anaerobically, because biologically, wastewater treatment can either be done using activated sludge because it can degrade waste more effectively. This liquid waste treatment is carried out through 3 main processes, namely physical processes, chemical processes and biological processes.

Each process takes a long time, for the first physical process, which is carried out by sedimentation and filtering coarse materials suspended in batik wastewater. Then the second process is a chemical process carried out by the method of coagulation and flocculation of batik wastewater, the aim is to regulate the pH of the wastewater and can facilitate the process of solid deposits dissolved in wastewater. And the last process is a biological process, this process uses the activated sludge method with the aim of reducing soluble organic components through degradation by microorganisms (Muhimmatin, 2019).

These industrial activities can have a direct impact, as well as an indirect impact. Because the direct impact is because if the activity can be directly felt by humans, but the negative indirect impact that reduces the quality of human life must be avoided. Disposal of waste without prior processing due to negligence on the part of the producer and the beginning of environmental damage. Waste generated by an industrial activity in addition to causing environmental pollution, and also the waste can cause health problems for living things on earth (Ardiatma and Ariyanto, 2019).

The impact of this waste on human health is that it can cause headaches, headaches, and dizziness, if someone who is infected with such a hazardous material must be helped immediately, if it is too late to help it will result in death, cancer, cataracts, and respiratory infections. Waste and waste management has been regulated in government regulations, B3 waste management contains storage and finally utilization, hazardous waste and must not be carried by transporters.

But it must be licensed and need a recommendation from Dinas Perhubungan Transportasi Darat (DISHUB) (Nasir et al., 2019). In waste prevention means eliminating or reducing the amount or toxicity of waste, including recyclability. Waste prevention includes the process of conserving inventory, eliminating, reducing or reusing it. For this packaging product, it is implementing waste reduction technology and equipment so that it can last a long time and can be reused

Then waste management is one of the public infrastructures to provide goods or services, and resembles goods such as natural gas, water and services. This waste transportation can be done to several facilities such as local or regional processing. Processing facilities such as a waste incineration plant as one of the final destinations for the waste to be processed, for compression, sorting and separation (Nasir et al., 2019). Industrial waste is one of the most serious problems in the current era (Skenderovic et al., 2015).

Therefore, the reason that underlies the cause of waste from a production process, means that waste treatment must be carried out from the beginning or as early as possible

must know the process of waste activities from upstream to final because if this process is not carried out it will be fatal.

The urgency of handling industrial waste results in waste that is vulnerable to the environment, both in the form of liquid and solid. Therefore, we must educate small industries regarding the process of handling the waste. Because this problem is still fundamental in handling and managing waste, namely the lack of knowledge of business actors regarding the handling and management of hazardous waste. Another problem is that there is no bright spot in relation to those who manage waste and the industry that produces waste, even though in that much business it creates economic value (Sunarsih, 2014).

Disposal practices in developed countries, including safe disposal and management of household waste, are a problem facing some cities. However, environmental pollution has a very serious negative impact on public health and safety. The cause of improper waste management is a lack of awareness from the community and management, then inadequate infrastructure and lack of planning. The obstacles to lack of waste management may not be felt now but they will be felt in the next 5 to 10 years (Sunarsih, 2014).

## 2. Methods

Garbage is residual material, materials that are not used or materials that have been taken as the main part, from an economic point of view, waste produces many benefits for the environment if the waste is managed properly, if it is not managed properly it will cause environmental pollution problems. Garbage has 2 types, namely organic and inorganic, organic waste is waste that can be decomposed by the soil or by itself can decompose such as vegetables, fruits, rice, or materials containing protein, the impact of organic waste disposal is to produce a foul or unpleasant odor. Then inorganic waste is waste that is difficult to decompose such as plastic, cans, household appliances, Styrofoam. Etc. In this design it is necessary to have good waste management, there are also ways to deal with the waste problem.

1. Election

Waste management can be done by sorting out organic and inorganic waste, if organic waste can be used as compost for houseplant fertilizer. Then the inorganic is better to be sorted first because of the inorganic waste there are several items that can be recycled

2. Rubbish can

At this stage of storage, every house must have a place for storing waste to make it easier for officers to move it to a shelter, and it is better when the waste is in a storage area, the waste is in accordance with its class, it seems organic and inorganic.

3. Collection

In this special place to deal with the problem of unified waste from several household sources.

4. Transport

For the type of waste transportation vehicle used is a dump truck to make it easier when loading goods so that it is directly controlled by the driver not in direct contact with hands.

5. TPA

For the last process, namely the final disposal from collection to the final place, at this final place the waste is managed in several ways, some are burned and some are recycled.

According to the law this work environment defines where workers are carried out under the supervision of certain operations in a workplace, work procedures and relationships in the work process. In the Middle Ages, environmental management was not given much attention then many infectious diseases at that time, and in this century due to

inadequate sewage treatment the number will increase from before. It is important for the general public to know the negative impact of the environment (Suardi et al., 2018).

For the existence of a waste bank, it is very good to encourage people to carry out waste sorting and recycling activities. Waste bank customers can get income from there because they take advantage of the selection and recycling of solid waste, this can help to build the economic condition of the community. And this waste bank is very helpful in reducing organic waste that is thrown into the landfill by 1.5% every year, and the members of the waste bank always increase every year (Nasir et al., 2019).

One of the community service programs is helping to deal with waste problems, it is better when working with PEKA members (Female Heads of Families), and the method of this activity is carried out through 4 processes. First, counseling is carried out by briefing or providing knowledge about waste and the impact of waste, especially household organic materials into fertilizer.

Second, the training in this process is for women to be trained or practice how to recycle organic waste into fertilizer, such as sorting waste properly, chopping organic waste into smaller parts, putting organic waste into plastic and being given a solution of sugar and EM4. The last process is to wait one month for the finished compost, and then apply it to the plants or vegetables in the yard (Hamdiani et al., 2018).

### 3. Results and Discussion

From the results of the worsening of environmental pollution in several places, the climate that is most intense is warming, depletion or depletion of the ozone layer. The impact of these economic activities on the environment can be of different nature, such as direct and indirect. In understanding the concept of the work environment, it is very important if it is associated with the concept of environmental protection and the discussion of environmental management, because this has several reasons. Because the work environment network Most of the environment and there are connections and the process is related to the provisions of the law on occupational safety and health.

### 4. Conclusions

We can conclude from the previous discussion that the relationship between living things and the environment is very influential, if the environment is not good then the impact will be on living things on this earth. The importance of protecting the environment and managing it so that in the future there will be more attention, it turns out that waste is not an item that can no longer be used but waste has many benefits such as being compost, can be recycled, one of the substitutions for diesel fuel. Behind the rest of the waste, it turns out that there are many benefits for the surrounding environment, and for workers dealing with environmental problems, more attention must be paid to their health and safety because workers are already supported by law to protect against all environmental activities.

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**Author Contribution**

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