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Analysis Driviing Force, Pressure, State, Impact And Regional Environmental Issues Kediri City

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ABSTRACT

The priority issue in the City of Kediri is waste with the number of households served by waste transportation as much as 98.811% and 1.189% unserved. The population is 284,003 people, if 1.189% of the waste is not collected, then the volume of waste generation is 8.57 m3/day (assuming that each person produces 2.5 liters/person/day of waste), a month collected as much as 251.35 m3. The occurrence of river water pollution due to domestic and industrial waste which discharges its liquid waste into water bodies, and the not optimal processing of WWTP in Industry and Hospitals in the City of Kediri. Design This research uses descriptive analysis that explains environmental issues and problems in the city of Kediri. The variables described are: waste processing, water pollution, and air pollution. The results of this study show that most of the waste processing in the city of Kediri (70%) has not yet carried out waste sorting and processing starting from the source (households). Pollution of river water in the city of Kediri is mostly caused by 60% domestic waste, 40% industrial waste. Air pollution in the city of Kediri has not reached a dangerous limit, namely the results of the air quality index in the city of Kediri 86%. The Kediri City government's response included the construction of a Communal WWTP, tightening permits for disposing of liquid waste (IPLC) for industry and requiring industries/business activities that produce wastewater, to make WWTPs. Efforts made by the Kediri city government to minimize air pollution are greening activities with one sub-district, one green open space, while in the transportation sector, through activities such as procuring mass transportation for school children.

Keywords : City of Kediri, Environment, Issue

INTRODUCTION

The area of Kediri City which reaches 63.40 km2 is divided into three sub-districts, namely Mojoroto sub-district, Kota sub-district and Islamic boarding school sub-district. Overall, there are 58,583 households in Kediri City with a population of 294,022 people. Issues City of Kediri is Increased waste volume River pollution by domestic waste and industrial waste. Land use change (increased settlement/housing resulting in less rainwater infiltration)(Dinas Lingkungan Hidup Kebersihan dan Pertamanan Kota Kediri, 2022).

Driving Force : The increase in population, in 2018 in the City of Kediri reached 290,678 people. There was an increase of 0.7% compared to 2017, namely 288,692 people, because Kediri City became an Education City and Service City. The economy of the people

of Kediri City has increased due to the 100 million community service program per RT The high population and activity indirectly increase the volume of waste. The changing lifestyle of people by utilizing online transportation and also online purchases can indirectly increase the economy in the City of Kediri.(Dinas Lingkungan Hidup Kebersihan dan Pertamanan Kota Kediri, 2022)

Pressure : An increase in the number of residents producing domestic waste, in 2018 the population in the City of Kediri reached 288,692 people. There was an increase of 0.7% compared to 2017, which was 290,678 people. The usable land for the landfill for final disposal (TPA) in Lebak Tumpang Keluruhan Pojok is almost full and in 2019 it is necessary to add new land for the TPA. There are still residents who litter in rivers and roadsides. Lack of public awareness and participation in waste management with the 3R system (reduce, reuse, recycle). Lack of 3R system waste management facilities such as composter, biogas, etc. in residential areas, markets, institutions, and schools. Lack of garbage collection fleet. Lack of waste processing facilities at TPA.(Dinas Lingkungan Hidup Kebersihan dan Pertamanan Kota Kediri, 2022)

State : Increased waste generation which reached 125 tons kg/day. The land for final disposal (TPA) of waste in Lebak Tumpang is almost full . In 2019 a new TPA was constructed with a Sanitary Landfill system. (Dinas Lingkungan Hidup Kebersihan dan Pertamanan Kota Kediri, 2022)

Impact: With the increasing population and also the changing lifestyle of the people, indirectly the cases of DHF in Kediri City have also increased. Traffic congestion, indirectly, ISPA cases have also increased.

Response : The Municipal Government of Kediri has operated the Lebak Tumpang TPA since 1992 with a sanitary landfill system. Utilization of CH4 / methane gas that is released into the air and utilizing CH4 gas as a renewable alternative energy fuel that has been used by residents around 70 families to replace LPG in Pojok Village, Mojoroto District. Promoting waste management using the 3R system (reduce, reuse, recycle) in collaboration with PKK, Environmental Cadres, and the 3R environmental community. Provision of sorting trash bins and sorting bins that separate organic and inorganic waste. Manufacture of integrated TPS that can process organic waste into compost and recycle inorganic waste. Create pilot Garbage Banks in sub-districts that are integrated with the Serial village Program. (Dinas Lingkungan Hidup Kebersihan dan Pertamanan Kota Kediri, 2022)

METHODS

This research descriptive analysis that explains environmental issues and problems in the city of Kediri. The variables described are: waste processing, water pollution, and air pollution. Design This research uses descriptive analysis. (Dinas Lingkungan Hidup dan Kehutanan DIY, 2020; Hendriarianti, Triwahyuni and Tyagita Ayudyaningtyas, 2022)

RESULTS

The results of this study show that most of the waste processing in the city of Kediri (70%) has not yet carried out waste sorting and processing starting from the source (households). Pollution of river water in the city of Kediri is mostly caused by 60% domestic waste, 40% industrial waste. Air pollution in the city of Kediri has not reached a dangerous limit, namely the results of the air quality index in the city of Kediri 86%.

Air pollution : Air pollution in the city of Kediri is caused by industrial activities, burning activities with Incinerator in hospitals, activities, home Industry which in its production process uses combustion, and motor vehicle exhaust. Air pollution due to activities industry can be caused by emissions from boiler chimneys fuel combustion. Currently Kediri City has four industries large scale namely PT. Gudang Garam, PG Pesantren, PG Mrican, and

PT Eternal Archipelago Conch. The four industries are good directly or indirectly contribute to air pollution in the City Kediri.

From data The Kediri City Transportation Service has 123,213 vehicles motor that uses premium fuel and fuel solar. In addition to the above activities, agricultural activities also cause the occurrence of air pollution in the city of Kediri, namely through processing waste products from rice fields, plantations and animal husbandry produces CH4 gas emissions and the use of urea fertilizer in agriculture and plantations that produce CO2 emissions.(Devara, Priyanta and Adharani, 2021; Ruhiyata, Imamulhadib and Adharanic, 2022)

Soil Pollution : Soil contamination comes from excessive use of fertilizers rice field and plantation activities, deep inorganic waste piles soil, domestic wastewater runoff, solid waste disposal without treatment. Pollution by this fertilizer occurs due to the use of synthetic fertilizers so that the longer the use of the fertilizer causes loss of certain elements in the soil, while solid waste often produced industrially(Hendriarianti, Triwahyuni and Tyagita Ayudyaningtyas, 2022; Pradana, Prasaningtyas and Ariyaningsih, 2023)

Regional Innovation in Environmental Management

a. Environmental Rehabilitation

Environmental rehabilitation is a process used to improve the environmental impact of human activities on degraded environment. Long term goals of rehabilitation is to improve the quality of the environment and management of natural resources so that utilization and reserves natural resources and environmental quality will be sustainable. As an environmental rehabilitation effort in 2017, the Government City of Kediri, and the Agriculture Office of the City of Kediri held movement activities planting 1 billion trees.

b. Environmental Impact Analysis (AMDAL)

There Are 233 Environmental Recommendations Issued By The Environment Agency Cleanliness And Landscaping In The City Of Kediri Until 2018.

c. Law Enforcement

One of the efforts of the Kediri City Government in responding to this condition is by increasing the effectiveness of complaint management public. Various statutory provisions have set the legal basis for the government's efforts. In Law–Invite No. 32 of 2009 concerning Protection and Management. The Environment provides strict environmental protection meaning the importance of environmental management. In 2018 there are two complaints that go to the environmental office of the City of Kediri and The status of this complaint has been resolved.

d. Community Participation

Community participation has an important meaning in the effort environmental rescue. Community participation is a form of understanding of concern for the sustainability of the surrounding environment. This concern gave birth to a number of Non-Governmental Organizations which registered and currently in the City of Kediri there are 16 NGOs. Participation the community in the City of Kediri is shown by the achievement of several award. An award is a form of hard work sustainable activities and can show consistent results and produce positive things for the surrounding environment. During in 2018 there were 11 awards namely the Adipura award, Adiwiyata award, Clean and Sustainable Village (BERSERI) and The Best Sanimas.

e. Institutional

Development of environmental management institutions at the regional level substantively follow the dynamics of global, regional and national ecological awareness. Even environmental institutional authority in the region qualified as a fundamental aspect of environmental management in line with the development of acceptance of decentralization and its shift centralization. Thus, environmental management institutions as an essential basis for environmental management to optimize "Protection and management of the environment".

DISCUSSION

Environmental management of an area requires environmental information that contains at least information regarding environmental status, environmental hazard maps and other environmental information. Regional environmental analysis and policy evaluation are carried out using the DPSIR (Driving Force – Pressure – State – Impact – Response) approach method (Hendriarianti, Triwahyuni and Tyagita Ayudyaningtyas, 2022).

Based on Law Number 23, 2014 concerning Regional Government and Government Regulation Number 38 of 2007 have delegated environmental management authority to Provincial and Regency/City Regional Governments. On the other hand, the Law on Environmental Protection and Management (Law Number 32 of 2009) in article (62) mandates that Regional Governments need to develop an environmental information system that contains at least information regarding environmental status, environmental hazard maps. and other environmental information.(Dinas Lingkungan Hidup dan Kehutanan DIY, 2020; Dinas Lingkungan Hidup Kebersihan dan Pertamanan Kota Kediri, 2022; Ruhiyata, Imamulhadib and Adharanic, 2022).

Driving force is a driving force which causes pressure on environmental conditions (state). The factors driving pressure in Figure 2 are depicted in the light green box consisting of human and infrastructure needs. Human needs include food, raw materials for products, water, clothing and shelter, health, lifestyle, security. Pressure factors (green box) that can arise from the driving forces of human and infrastructure needs include land changes, waste disposal in water, soil, air and excessive use or consumption such as physical damage, the emergence of new biota, the abundance of certain biota. Pressure causes dynamics in environmental conditions (Pradana, Prasaningtyas and Ariyaningsih, 2023).

Environmental conditions consist of conditions abiotic (physical variables and chemical variables) and biotic conditions (pathogens, living habitat, population, rapidly growing or invasive species. The dynamics of environmental conditions will cause impacts (red box) in the form of supporting services, regulatory services, provision services and cultural services (related to non-material benefits from the environment such as aesthetics, comfort, spirituality) (Satria, Monalisa and Juliana, 2021).

Stress also includes environmental interactions as a source of human economic activity which in the process has the potential to reduce (deplete) natural resources, disrupt ecosystems, and have negative impacts in the form of pollutants (garbage/waste) and/or environmental damage. Polluted/damaged environmental conditions will have a direct impact on human health and welfare. So, pressure will change environmental conditions, which in turn again affects human welfare itself. These environmental conditions include the quality of water, air, land, availability of natural resources, biodiversity. Societal responses to these changes at different levels can take the form of regulations, technology, and other capacity building. This response influences environmental conditions and human activities. This ability to respond depends on the quantity and quality of information available (Pradana, Prasaningtyas and Ariyaningsih, 2023; Salim *et al.*, 2023).

From the results obtained through analysis based on the Driving Force, Pressure, Impact and Response indicators, the results obtained are: Driving Force : The increase in population, in 2018 in the City of Kediri reached 290,678 people. There was an increase of 0.7% compared to 2017, namely 288,692 people, because Kediri City became an Education City and Service City. The economy of the people of Kediri City has increased due to the 100 million community service program per RT The high population and activity indirectly increase the volume of waste. The changing lifestyle of people by utilizing online transportation and also online purchases can indirectly increase the economy in the City of Kediri.(Dinas Lingkungan Hidup Kebersihan dan Pertamanan Kota Kediri, 2022)

Pressure : An increase in the number of residents producing domestic waste, in 2018

the population in the City of Kediri reached 288,692 people. There was an increase of 0.7% compared to 2017, which was 290,678 people. The usable land for the landfill for final disposal (TPA) in Lebak Tumpang Keluruhan Pojok is almost full and in 2019 it is necessary to add new land for the TPA. There are still residents who litter in rivers and roadsides. Lack of public awareness and participation in waste management with the 3R system (reduce, reuse, recycle). Lack of 3R system waste management facilities such as composter, biogas, etc. in residential areas, markets, institutions, and schools. Lack of garbage collection fleet. Lack of waste processing facilities at TPA.(Dinas Lingkungan Hidup Kebersihan dan Pertamanan Kota Kediri, 2022)

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Based on this data, the Kediri city government has carried out various innovations, namely: Environmental Rehabilitation, Environmental Impact Analysis (AMDAL), Law Enforcement, Community Participation and Institutional.

The Kediri City government's response included the construction of a Communal WWTP, tightening permits for disposing of liquid waste (IPLC) for industry and requiring industries/business activities that produce wastewater, to make WWTPs. Efforts made by the Kediri city government to minimize air pollution are greening activities with one sub-district, one green open space, while in the transportation sector, through activities such as procuring mass transportation for school children.

CONCLUSION

Environmental Quality Index Life (IKLH) City of Kediri in 2022 was 64,60. The River Water Quality Index (IKA) has a score of 48.57 . The Air Quality Index (IKU) has 90.28 or in very good condition Land Cover Index (ITLH) has a figure of 41.58.

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