

Performance Analysis of the Jayapura City Environment and Forestry Agency in Overcoming Pollution in Youtefa Bay

Dolfina Costansah Koirewoa¹, Edoward Krisson Raunsay², Lazarus Ramandei³,

^{1,2,3} Cenderawasih University of Jayapura, Papua

ABSTRACT

The research aims to describe the performance of the local government in this case through the Jayapura City Environmental Agency in tackling Pollution in Youtefa Bay. Performance is assessed using several indicators, namely productivity, responsiveness, and accountability. In addition, this research also looks at the factors that support and hinder the performance of the Environmental Agency. This research took place in Jayapura City and was conducted at the Jayapura City Environmental Agency. This type of research is descriptive qualitative, where this research seeks to describe a particular situation or social phenomenon and assess the research problem. Data collection was carried out using documentation and interview techniques. The data uses primary and secondary data. Primary data is obtained directly from informants related to activities that cause pollution in Youtefa Bay, both from the Environment Agency and from the community. While secondary data comes from books, documents, and other sources of information related to research. From the research results it can be concluded that in general the implementation of pollution prevention activities in Youtefa Bay has been carried out. However, the results achieved have not shown maximum results, where air pollution still occurs. So, this research wants to know the performance of the Environmental Agency as well as the community to participate in preventing environmental pollution. However, the Environmental Agency as the executor of the apparatus has tried to deal with pollution. Based on the results of the research, BLH needs to increase its productivity, especially in prevention, supervision, and control activities.

Keywords: performance, industrial and household wastewater pollution

INTRODUCTION

The environment is defined as a spatial unit with all objects, natural resources, and living things, including humans and their behavior, which affect the survival and well-being of humans and other living things (Keraf, 2010). This environment consists of 3 main components, namely physical components (abiotic), abiotic components, and cultural components (Rusdina, 2015). In the process of implementing the development of the three components, it is likely that they will experience changes or are better known as will be affected. Positive impacts are expected by humans to improve the quality and comfort of life (Manik, 2018). While negative impacts are not expected because they can reduce the quality and comfort of life, they must be handled as well as possible.

The dynamics of the development of human life show that the more modern human life is, the greater the damage and environmental pollution it causes (Pramudyanto, 2014). Besides that, the development of life also causes the depletion of natural resources on this earth (Adnan et al., 2008). If the activities of community groups in the past only caused minimal damage and environmental pollution, then the activities of today's community groups cause multiple damages, so the Government as the organizer of the state is obliged to issue policies in the environmental sector nationally (Sachoemar & Wahjono, 2018).

One of the principles for managing life in Indonesia has been formulated in Law Number 23 of 1997 concerning Environmental Management. The law has formulated definitions, goals, and principles as well as targets as well as mechanisms and authorities for environmental management. Environmental Management is defined as an integrated effort to preserve the functions of the environment which includes policies for managing, utilizing, developing, maintaining, restoring, monitoring, and controlling the environment.

Control measures have a strategic position to maintain and supervise so that environmental functions are maintained both in terms of their carrying capacity and capacity. One of the measures to control environmental damage and/or pollution is the problem of water pollution. Water is the main requirement for life processes on Earth, there would be no life if there was no water on Earth. Clean water is highly coveted by humans, both for daily needs, industrial, agricultural, and so on. Currently, water is a problem that needs special attention. Getting good water according to certain standards now is not an easy thing because water has been polluted by various kinds of waste from human activities, be it industrial waste, waste from household activities, and waste from other activities (Ramandei & Nawipa, 2022). This direct disposal of waste is the main cause of water pollution. Waste (both solid and liquid) that enters the water will cause a deviation from the normal state of the water (Febriwahyudi & Hadi, 2012).

Environmental pollution is the entry or inclusion of living things, substances, energy, and or other components into the environment by human activities so that the quality drops to a certain level which causes the environment to not function

according to its designation (Article 1 point 11 of the Environmental Management Act)). Nationally, the Water Pollution Control Policy is regulated in the Government Regulation of the Republic of Indonesia Number 82 of 2001, concerning Water Quality Management and Water Pollution Control.

Economic growth can occur as a result of development in various fields. Both in the industrial sector, residential services, education, and transportation. Along with urban development, there has been a change in the function of land which was previously undeveloped agricultural land to a built-up area. These changes led to an increase in population density and settlement density. Expansion of built-up land, whether used as a settlement, trade, or industry, will automatically trigger problems of environmental quality degradation. In the industrial sector itself, if proper management of industrial waste is not carried out, it will cause various problems. These problems include the problem of flooding, garbage, air pollution, and water pollution. In industrial activities, as well as in households, water that has been used is often immediately disposed of into the environment because its chemical content can pollute the environment so that the burden on the environment is getting heavier, especially pollution in the river which has contributed to the contamination of Youtefa Bay.

The city of Jayapura is a city that is developing very rapidly in the Province of Papua, so its location is very strategic, which provides very lucrative advantages for businesspeople to invest in this area. However, industrial growth also hurts the city's environment, especially on the rivers in Jayapura City. The rivers that flow here are experiencing worrying pollution. There are at least 4 rivers that pass through the Jayapura City area which are already in quite alarming condition.

Jayapura City as a city that is growing very rapidly, especially in the industrial sector with various wastes released from the production process, has the potential for pollution impacts. Based on Jayapura City Regional Regulation Number 6 of 2008 concerning Environmental Control, Article 9 requires that everyone who is going to dispose of wastewater to water sources must first carry out wastewater management, namely with a WWTP (Wastewater Treatment Plant). In Jayapura City, there are several industries, both the food industry, the furniture industry, the textile industry, etc., which have contributed to polluting the rivers which have an impact on Youtefa Bay pollution, such as the Hanyaan, Acai, Sbohony Rivers.

The problem of environmental pollution in Jayapura City is handled by the Jayapura City Environmental Agency. The task of the Environmental Agency is to organize the preparation and implementation of regional policies in the environmental sector. The Jayapura City Environment Agency admits that it has taken both preventive and repressive measures but problems are still being encountered. To overcome the problem of pollution due to wastewater, as well as pollution in rivers, there is a need for awareness and community participation to

participate in maintaining and tackling environmental pollution, especially those that have an impact on the pollution of Youtefa Bay and the ability of the city government to deal with wastewater pollution responsibly, so that the performance of pollution prevention both industrial and family waste can be handled properly.

METHODOLOGY

This research is qualitative research that intends to provide a systematic, factual, and accurate description of certain facts (Gunawan, 2013). The direction of the study of qualitative research is on everyday human behavior in a routine situation as it is. Based on the direction of the study, this research was conducted to obtain a clear picture of the performance of the Environmental Agency in tackling pollution in Youtefa Bay. Because this research seeks to describe, interpret, and analyze the performance of the Jayapura City Environmental Agency in tackling Pollution in Youtefa Bay, this research is categorized as a form of descriptive research, namely research that seeks to describe the state of certain social phenomena.

Study Site

The research location is at the Jayapura City Environmental Agency. The choice of location was because The Environmental Agency is a government agency or institution that is authorized by the government in the field of environmental protection.

Data Collection Technique

Data collection techniques used in this study are:

1. Interview

To collect information from this data source, interview techniques are needed, which in qualitative research is especially done in the form of in-depth interviews by asking questions directly to informants. Head of the Environmental Agency, Head of Nafri Village, Enggros, Tobati who also felt the impact of the Environment Agency's performance.

2. Observation

Observation techniques are used to extract data from data sources in the form of events, places or locations, objects, and recorded images.

3. Documentation

Documentation is a data collection technique by searching, collecting, and studying documents relevant to research in the form of archives, reports, regulations, documents, and other literature.

Sampling Technique

This research is a descriptive study, the sampling technique was carried out selectively by using theoretical considerations, the wishes of the researchers, empirical characteristics, as well as the needs and objectives of the research. This study uses a sampling method, namely purposive sampling or purposive sampling, in which researchers tend to use or choose informants who are considered knowledgeable and trustworthy to become solid data sources and know the problem completely without being based on strata or random, but with more emphasis on specific goals. (Gunawan, 2013).

Data Validity

To determine the validity or validity of the data, the researcher used a triangulation examination technique, namely a data checking technique that utilizes something other than the data to check or compare the data (Moloeng, 2009). There are 4 kinds of triangulation as an examination technique that uses sources, methods, investigators, and theories. In this study, the triangulation used is source triangulation, which means comparing and checking back information obtained through different tools and times. This is done by comparing the interview data with the contents of a related document. Thus one data will be controlled by the same data from other sources (Bachri, 2010).

Data Analysis Technique

In qualitative research basically, the analysis process is carried out simultaneously with the implementation process of data collection. The model used is an analysis model that is carried out when the core data has been obtained. Then interpretation of the data is carried out where the author discloses it in the form of descriptions and other explanations which in the end conclusions and suggestions can be drawn by this research. In this interactive method, there are three components of analysis, namely: data reduction, data presentation, and conclusion. In more detail, the process can be described as follows:

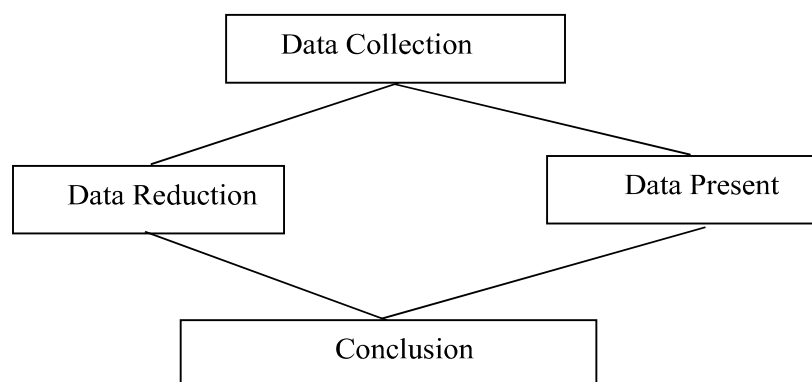


Figure 1. Interactive Analysis Model Scheme (H.B Sutopo, 2002:96)

RESULTS

Jayapura City Environment Agency Pollution Management Performance

To regulate and prevent all activities carried out by the community from causing damage to the environment, the government issued Law No. 23 of 1997 concerning the Environment which regulates all activities related to the environment. To prevent water pollution, the government issued Government Regulation No. 82 of 2001 concerning Water Quality Management and Water Pollution Control. This government regulation contains requirements that must be complied with by industrial activity actors while carrying out industrial activities. The purpose of PP No. 82 of 2001 is to prevent or minimize pollution of water sources caused by the disposal of waste from industrial activities and society. To be able to find out how much performance the Jayapura City Environmental Agency has achieved to deal with pollution in Youtefa Bay, the following is explained in this chapter using indicators of productivity, responsiveness, and accountability. Apart from that, it will also discuss the factors that support and hinder the handling of Youtefa Bay.

1. Productivity Indicator

Productivity can be understood as the ratio between input and output, meaning the comparison of the extent of effort made with the results obtained in a certain period. In connection with this predictability, the performance of the Environmental Agency can be measured from the achievement of the targets set by the results of the realization. There are several activities carried out by the Environmental Agency in tackling Batik industry wastewater pollution. These activities refer to Regional Regulation No. 6 of 2008 concerning Environmental Control. These activities are prevention, counseling, supervision, and control.

Table 1. Water quality standards based on Government Regulation No. 82 of 2001

Class	Quality Standards										
	BOD	COD	pH	Zinc	Copper	Chrome	Nickel	Lead	Nitrite	Nitrate	Cadmium
Class I	2	-	6-9	0.05	0.02	0.05	-	0.03	0.06	10	0.01
Class II	3	25	6-9	0.05	0.02	0.05	10	0.03	0.06	10	0.01
Class III	6	50	6-9	0.05	0.02	0.05	20	0.03	0.06	20	0.01
Class IV	12	100	5-9	2	0.2	1	20	1	-	20	0.01

Source: Jayapura City Environmental Agency

Information:

Class I: water that can be used for drinking

Class II: water that can be used for water recreation facilities/infrastructure, freshwater fish management, animal husbandry, water for irrigating crops

Class III: water whose allotment can be used for the cultivation of freshwater fish, water husbandry to irrigate crops

Class IV: water that can be used to irrigate crops

2. Responsiveness Indicator

Responsiveness here is seen from the Environmental Agency's response to the wishes of the public, both the public and the industrial community. In its operations, the Environmental Agency must be able to respond to complaints, demands, and needs of industry players and the public so that the prevention of pollution can be carried out as well as possible. Regarding the wishes of industry players and the community, the responsiveness of the Environmental Agency can be said to be good, this can be seen from the activities of the Environmental Agency.

3. Accountability Indicators

Accountability is a criterion for knowing the extent to which the Jayapura City Environmental Agency is responsible for carrying out its duties by the values and norms that exist in society. An activity of a public organization has an accountability level if the activity is deemed correct and by the values and norms that develop in society. The accountability of the Environmental Agency vertically is to the Regional Government, in this case, the Mayor of Jayapura. Meanwhile, the accountability of the Environmental Agency horizontally is accountability to the wider community.

Factors that support and hinder the performance of the Jayapura City Environment Agency in tackling Youtefa Bay

1. Supporting Factors

a. The Environmental Agency

The government pays great attention to the pollution of Youtefa Bay, so through several Regional Regulations in Jayapura City, it is more directed towards creating environmental conditions, cleanliness, and others. The government also organizes pieces of training to improve the performance of the Environmental Agency in tackling environmental pollution problems. Officers from the Environmental Agency are also enthusiastic about participating in training activities both organized by the government and by non-government agencies.

b. From the Community

Community enthusiasm for participating in counseling activities is already a good start. Even though in the supervision and control there are still things that are not by the provisions, the Environment Agency tries to overcome them as well as possible. There has been an increase in awareness of the environment from the community. The Environmental Agency is also assisted by NGOs concerned with environmental sustainability, which help monitor environmental conditions.

2. Obstacle Factor

a. The Environmental Agency

In the implementation of a program, funding is an important determining factor. Without adequate financial support, an activity can't run smoothly. The source of funds for the implementation of industrial and household wastewater pollution control comes from the Jayapura City Revenue and Expenditure Budget (APBD), which annually budgets funds for pollution prevention activities. However, the allocation of existing funds is still insufficient to obtain maximum results, so the Jayapura City Environment Agency as a government organization that has authority in dealing with pollution issues is trying to utilize existing resources as effectively and efficiently as possible. The limited budget that is owned is one of the obstacles faced in the implementation of pollution control activities carried out by the Jayapura City Environmental Agency. Even though the development and activities of small industries/factories are growing so rapidly in Jayapura City and are continuing and tending to increase. As a result, our extension activities, supervision, and control.

b. From the Community

Awareness and community participation in the handling of pollution carried out by the Environmental Agency can be said to be lacking. The batik industry community sometimes pays little attention to environmental aspects in the implementation of their industrial activities. Pollution and environmental damage can be minimized if batik industry owners use pollution control tools. But in practice, the use of these tools requires a lot of money which affects the increase in production costs. Pollution and environmental damage can be minimized and even prevented if industrial owners use pollution control tools and are proactive in the community.

DISCUSSION

To control environmental problems, the Regional Government of Jayapura City established an Environmental Management Agency, in Jayapura City the agency is the Environmental Agency. The Environmental Agency is obligated to monitor every business and or activity periodically and at any time as needed. The activities carried out by the Environmental Agency are coaching in nature. The Environmental Agency guarantees and directs that the implementation of industrial activities carried out by the industrial community goes according to applicable regulations.

Monitoring the condition of the existing rivers shows that there are pollution conditions in several rivers which show an increase and decrease in some contaminated content in the water. The Environment Agency gave the reason that this condition was caused by community activities as well as small production activities, as well as workshops and there were so many of them that so much waste was produced. From the monitoring carried out at several points of the river, the pollution that occurred could not be determined that the pollution was caused by the industry around it, but rather the activities of the people living upstream to downstream of each river.

In outreach activities, if there are industry players and the public who are not aware of a problem, the officers will provide the information needed, in monitoring activities the Environment Agency aids with the implementation of waste treatment to industries that have not implemented according to the established provisions as well as to the community through outreach activities and appeal. Regarding control, the officer gives time for the industry to correct what is not or is not appropriate before being given a written warning. In this stage, the industry player is also allowed to explain what happened. Meanwhile, responsiveness to the general public is also quite good with the participation of the community in providing suggestions, considerations, opinions and even submitting complaints.

The responsibility of the Environmental Agency to the government is not only a matter of funds but also the implementation of activities carried out by the Environmental Agency whether it meets the targets set by the government and refers to the rules that have been set or not. The implementation of activities in tackling industrial and household wastewater pollution is by the principles of proper administration and by organizational policies because basically, it refers to the rules from the government in terms of law and legislation.

The responsibility of the Environmental Agency for Overcoming Pollution in Youtefa Bay has not yet obtained maximum results because several cases of pollution still occur. The responsibility of the Environmental Agency is indeed not only for industrial pollution but also for society at large, but many other programs also need handling. Meanwhile, the responsibility of the Environmental Agency to the community is more on the implementation of activities. In counseling activities, the Environmental Agency has carried out its

duties properly. It's just that the supervision and control of the Environmental Agency is not optimal and there are still pollution problems in society.

Human resources are one of the factors that must be prepared and fulfilled by the Environmental Agency in every activity carried out to tackle industrial and household wastewater pollution. In terms of quantity, the number of officers is still lacking, especially after most of the employees have been withdrawn as provincial employees after the enactment of the new Regional Apparatus Organization (OPD) according to Regional Regulation No. 14 of 2008. Meanwhile, from a quality standpoint, the knowledge possessed by Environmental Agency officers is not sufficient considering that the duties of the Environmental Agency cover various fields of science.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. The attitude of officers in carrying out pollution prevention activities, especially industrial and household wastewater pollution, is quite good, but there are still industrial players who do not care about activities.
2. In general, the implementation of all series of countermeasures activities has been quite good, but violations still occur. This is due to inadequate supervision due to an inadequate number of officers.
3. Enforcement of PP No. 82 of 2001 has not been implemented optimally by the government. This can be seen from the implementation of control activities, where sanctions have not been strictly applied for violations committed by industry players. In this regulation it is written that "Every person in charge of a business and or activity that discharges wastewater into water or water sources must comply with the requirements stipulated in the permit" article 38 paragraph 1 and one of the conditions contained in the permit is the obligation to treat waste. As written "In the requirements for a permit to dispose of wastewater as referred to in paragraph (1) it is obligatory to include the obligation to treat waste" Article 38 paragraph 2 (1).
4. Judging from river monitoring in 2010-2017 according to information from the Jayapura City BLH, it shows that there is a high level of pollution of chemical substances in river water, this shows that the government's efforts to tackle pollution have not shown optimal results. However, this is not only due to the poor performance of the Environmental Agency but also influenced by several factors from outside the organization. Among them is the awareness of industry players, they are reluctant to process their remaining production waste because it requires a complicated process and large funds.

Recommendations

1. Productivity from monitoring and control activities needs to be increased. For this reason, supervision needs to be intensified by conducting more frequent supervision. Control activities require stricter action against violations of existing regulations.
2. The accountability of the Environmental Agency to the community needs to be increased because, from violations committed by industrial owners, it is the community that is affected.
3. There needs to be another solution in waste treatment other than simple WWTP.
4. It is necessary to increase cooperation with institutions outside the government, namely NGOs to participate in supervising and monitoring environmental pollution.
5. There needs to be compensation for people affected by pollution.

FURTHER RESEARCH

Based on the recommendations that have been made, some further research must be carried out to answer the existing problems. Another study that needs to be carried out next is the Community Sustainability Assessment as a Subject in Tekul Yotefa, Jayapura City.

ACKNOWLEDGMENTS

This research could be completed with the support and contribution of various parties. Therefore, we should express our gratitude to:

1. Head of the Jayapura City Environment and Forestry Agency
2. The leadership of Cenderawasih University for their support so that this study can be carried out properly.
3. All parties who contributed directly and indirectly to the implementation of this study.

REFERENCES

- Adnan, H., Tadjudin, D., Yuliani, E. L., Komarudin, H., Lopulalan, D., Siagian, Y. L., & Munggoro, D. W. (Eds.). (2008). *Belajar dari Bungo: mengelola sumberdaya alam di era desentralisasi*. CIFOR.
- Bachri, B. S. (2010). Meyakinkan validitas data melalui triangulasi pada penelitian kualitatif. *Jurnal Teknologi Pendidikan*, 10(1), 46-62.
- Febriwahyudi, C. T., & Hadi, W. (2012). Resirkulasi Air Tambak Bandeng Dengan Slow Sand Filter. *Jurnal Teknik Pomits*, 1(1), 1-5.
- Gunawan, I. (2013). Metode penelitian kualitatif. *Jakarta: Bumi Aksara*, 143.
- Keraf, A. S. (2010). *Etika lingkungan hidup*. Penerbit Buku Kompas.
- Manik, K. E. S. (2018). *Pengelolaan lingkungan hidup*. Yogyakarta: Kencana.
- Moloeng, L. J. (2009). Metodologi Penelitian Kualitatif, Bandung: PT. Remaja Rosdakarya, 14.
- Peraturan Pemerintah No 82 Tahun 2001 tentang Pengelolaan Kualitas Air
- Perda No 6 Tahun 2008 tentang Pengendalian Lingkungan H
- Pramudyanto, B. (2014). Pengendalian Pencemaran dan Kerusakan di Wilayah Pesisir. *J. Lingkar Widyaiswara*, 1(4), 21-40.
- Ramandei, Lazarus & Nawipa, Sepo. (2022). Community Participation in Waste Management in Hamadi South, South Jayapura District, Jayapura City. 2. 13-23.
- Rusdina, A. (2015). Membumikan etika lingkungan bagi upaya membudayakan pengelolaan lingkungan yang bertanggung jawab. *Jurnal Istek*, 9(2).
- Sachoemar, S. I., & Wahjono, H. D. (2018). Kondisi pencemaran lingkungan perairan di Teluk Jakarta. *Jurnal Air Indonesia*, 3(1).
- Undang-Undang Nomor 23 tahun 1997 tentang Pengelolaan Lingkungan Hidup.
- UU No 23 Tahun 1997 tentang Lingkungan Hidup.