

Analysis of Factors Affecting in Waste Bank Program For Sustainable Environment; A Case In Manado City

Felly Ferol Warouw

Universitas Negeri Manado

ferolwarouw@unima.ac.id

ABSTRACT

This research is to conduct an analysis of the management of environmentally friendly waste banks in the city of Manado. The method used is descriptive with a qualitative approach and is limited by three research focuses, namely the first identification of waste management programs in the city of Manado, secondly analyzing community participation in the waste bank development program and identifying factors that are obstacles and supporters in the development of waste banks in the city of Manado. The first research results concerning the identification of waste management there are various programs. For garbage banks to be an alternative solution to the waste problem in Manado City. Secondly, community participation is developing but is still in the consultation stage and not at the community control stage. Participation given by the community in the form of the obligation to sort household waste in the form of organic and inorganic. Third, there are supporting factors in developing a garbage bank in Manado City, namely the role of local and private governments, especially state-owned enterprises, as supporters of the implementation of the garbage bank program. As for the inhibiting factors such as low public awareness, the development of a waste bank requires high investment, low waste value, and the culture of Manado people who view waste as dirty.

Keywords : Factor, Waste Bank, Manado City

INTRODUCTION

The development of an urban area is always measured by increasing population and community activities that will affect the environment, especially related to city cleanliness (Sands, 1992). The increase in population and community activities is very influential on the increasing volume of waste in urban areas (Yadav, 2015). Various types of pollution that occur due to a pile of garbage both in the form of environmental damage and in changing public health conditions that exist (Sidhu, Ravindra, Mor, & John, 2017). The term garbage is a familiar term for all existing communities, a heap of various kinds of goods that are not used anymore that will cause unpleasant odors around it and there is no economic

value for the surrounding community (Sattler, Obrist, Duelli, & Moretti, 2011).

Environmental damage is currently increasingly concerning. Damage to the environment due to high economic and development activities in various sectors both in agriculture, industry, energy consumption, and waste disposal As can be seen clearly in daily activities, plastic packaging waste, cans, paper scattered on the drainage canal road, in river, even at sea (Seadon, 2010). These piles of garbage often create a place to live mice and other insects and bacteria that can endanger human health when in the vicinity of residential areas. Indonesia is rich in environment that is so abundant that it can be easily managed according to the needs of its people, but the situation in this country is not supported

by the attitude of people who care about the environment around them. Therefore, the existence of a public awareness of the importance of environmental management is more sharpened to be implanted in the mindset of Indonesian society as a whole. Nowadays plastic waste is now a frightening specter for the environment. This trash is often scattered over because of inappropriate handling. Indonesia has even been ranked as the number two contributor to plastic waste in the ocean. "In 2030, if not reduced, there will be more garbage than fish in our sea. Do we want to eat rubbish? Therefore, there is already a national action plan for handling plastic waste in the sea. As individuals, as ministers, all of us, we must make this a program. national," said Susi Pudjiastuti, Minister of Maritime Affairs of the Republic of Indonesia.

Population growth accompanied by high urbanization flows to urban areas as a result of modernization, has led to higher volumes of waste that must be managed every day (Buhaug & Urdal, 2013). Constraints that occur because there is an assumption by some people about the concept of a garbage bank, that they assume that the existence of a Waste Bank is the same as educating their mentality to be scavengers. Identical rubbish also dirty makes people not want to come into contact with rubbish. Moreover, when managing waste to be taken to a garbage bank, the community must sort through the waste, then they must also deposit their garbage to the Waste Bank. This they consider to be something that is less ethical.

Most major cities in Indonesia and even the world today is facing a problem of garbage that continues to increase every day. In the city of Manado, waste production continues to increase. At

present, the area managed by the environmental service (DLH) comes from various corners of the City. Much of that garbage comes from markets, household waste, industrial waste (Delgado, Rosegrant, Steinfeld, Ehui, & Courbois, 1999). With so much garbage coming every day, you can imagine how many piles of garbage have been collected after several years. The place that was once a ravine, is now practically partially covered with garbage.

From the results of preliminary observations by the author that the phenomenon that often arises regarding waste and its problems, the researchers chose the title: "Analysis of Factors Affecting the Environmentally Friendly Waste Bank Program in the City of Manado"

LITERATURE REVIEW

Nationally and internationally in each country has put in place various policies to combat the problem (Hammond, 2009). There are two important factors driving the industry to develop this plastic (Wolf, Vidlund, & Andersson, 2006). First, the development of mass production assembly lines. Previously, factories needed a lot of labor to produce only one product, making plastic products takes a long time. The second factor is World War II. Plastic is used for many things, from bazooka weapons to aircraft components. And between 1939 and 1945, plastic production grew almost four times. With the end of the war, plastic companies need to keep making a profit, so they then change their production from military vehicles to Barbie dolls. At that time plastic was very cheap, affordable for everyone: plastic containers, plastic furniture, plastic toys. And that's when plastic has

a wide appeal. But what had been a solution before was a problem now. Because plastics last a long time, every plastic that has ever been made stays, and will last for at least 500 years (Subba Reddy, Srinivasulu Reddy, Venkata, And, & Venkata Subbaiah, 2014). Illustration like this, if Leonardo da Vinci drank water from a plastic bottle when he painted the Mona Lisa, the bottle has not been completely decomposed at this time. Every day, more and more plastic is produced, used and disposed of. In countries that use disposable cups made of plastic, it may only take a few seconds for the cup to come out of the package, be used, and end up in the trash. So much plastic has been consumed that there is an area larger than France which is a collection of plastic waste that rotates at every depth in the North Pacific Ocean. The plastic is everywhere until the birds use it to build a nest. The legal umbrella in the development of a garbage bank in the city of Manado is Law Number 18 of 2008 concerning Waste Management. Along with Government Regulation Number 81 of 2012 concerning Management of Household Waste and Trash of Similar Household Trash, Regulation of the Minister of Environment of the Republic of Indonesia Number 13 of 2012 Concerning Guidelines for the Implementation of Reduce, Reuse, and Recycle through Garbage Banks, and Manado City Regulation No. 10 of 2010 concerning Waste Management is a legal force that changes the perspective of waste management and the existence of a waste bank. The regulation mandates the need for a fundamental paradigm shift in waste management, which is from a waste-collecting-transport paradigm to a treatment that relies on

waste reduction and waste management. Waste reduction activities mean that all levels of society, both government, business and the wider community in carrying out activities to limit waste generation, recycling and reuse of waste or better known as Reduce, Reuse and Recycle (3R) through smart, efficient efforts and programmed (Rohr & Martin, 2012).

METHOD

Types of research

Proof of research is carried out as a way to investigate and substantiate or clarify an event or knowledge using certain research methods, so that it can be analyzed and the level of research results known. In this study researchers used qualitative research. What defines qualitative research, which is also called interpretive research or field research, is a methodology borrowed from scientific disciplines such as sociology and anthropology and adapted to the educational settings of Lodico, Spaulding, and Voegtle (2006 quoted from Emzir (2010)). Qualitative research uses Inductive reasoning methods and strongly believe that there are many perspectives that can be expressed. Qualitative research focuses on social phenomena and on voting on the feelings and perceptions of participants under study. In addition it involves community participation in the form of analysis carried out with a quantitative approach to measure the level of participation the community in the garbage bank development program in Manado City.

Research focus

The focus of research is basically how the main problem can be understood by researchers to find

solutions to solving problems either in the form of descriptions or calculation results. For this research, the focus is sourced from the experience of researchers or through knowledge gained from scientific literature or other literature. In detail, the focus of this research is to:

1. Identification of waste management policy products in Manado City.
2. Analyze the process of developing the activities of the Garbage Bank as well as analyzing community participation in the development process concerning the conditions / level of participation
3. Analyzing the factors that become obstacles and supporters in the waste bank development program in the city of Manado

Analysis Method

The method used is to use a qualitative description of the waste bank development program in Manado City and quantitatively involve community participation in the development of the waste bank program in the City of Manado, for the overall purpose of using observations that occur in the field or research location. In detail analyzed 3 (three) research objectives to be discussed and raised at the beginning of the introduction concerning the analysis of the development program of the waste bank, including the level of participation that developed through studies in the garbage bank development program in the city of Manado.

Proof of research is carried out as a way to investigate and substantiate or clarify an event or knowledge using certain research methods, so that it can be analyzed and the level of research

results known. In this study researchers used qualitative research. What defines qualitative research, which is also called interpretive research or field research, is a methodology borrowed from scientific disciplines such as sociology and anthropology and adapted to the educational settings of Lodico, Spaulding, and Voegtle (2006 quoted from Emzir (2010). Qualitative research uses Inductive reasoning methods and strongly believe that there are many perspectives that can be expressed.

Qualitative research focuses on social phenomena and on voting on the feelings and perceptions of participants under study. In addition it involves community participation in the form of analysis carried out with a quantitative approach to measure the level of participation community in the garbage bank development program in the City of Manado. Research Focus The research focus is basically how the main problem can be understood by researchers to look for solutions to problem solving recommendations in the form of descriptions or results. the count. For this research, the focus is sourced from the experience of researchers or through knowledge gained from scientific literature or other literature. In detail, the focus of this research is to:

1. Identification of waste management policy products in Manado City.
2. Analyze the process of developing the activities of the Garbage Bank as well as analyzing community participation in the development process concerning the conditions / level of participation
3. Analyzing the factors that become obstacles and supporters in the waste bank development program in the city of Manado

RESULT AND DISCUSSION

In connection with the garbage bank the local government provides 43 Waste Banks. The garbage bank program in Manado City, is a social education activity that teaches the community to sort waste and foster public awareness in managing waste wisely and in the end will reduce the waste transported to the landfill. The development program of the waste bank through the waste bank cooperative is currently developing in the city of Manado and the object of study is the Manado CELSS waste bank. This garbage bank is a cooperative legal entity in cooperation with the Manado City Government, established at the initiative of Mr. Josly Sasaw and Marlon Kamagi as a forum to foster the community in waste management activities from upstream to downstream of the city of Manado, especially in Manado City Mahakeret. This waste bank formation program is in the context of reducing TPS / TPA waste and community economic empowerment by utilizing waste.

The people of Manado City certainly want to see the area clean, neat, and healthy. Therefore, community involvement in the form of participation does not only extend to the handling and reduction of waste, but rather as a supervisor in the environment to keep the environment free of waste. The form of community participation in waste management carried out by the community organized by the Manado CELSS waste bank cooperative is in the form of sorting out the rubbish carried out by the community itself and deposited in the waste bank center for savings and can be a deposit in the form of money both physical and cash digital. This is a form of community

participation to help the development of the Manado City CELSS waste bank and can maintain public awareness of the importance of managing waste.

Another form of community participation is by recycling organic waste into takakura compost fertilizer. Some processed fertilizers are sold and partly for local plant fertilizer. In addition there is also the making of biopori that serves to absorb water, this is useful to increase water absorption into the ground so that it can avoid flooding.

The budget is one of the factors supporting the success of the activities of the garbage bank including the Manado CELSS waste bank cooperative, without the support of the program budget it cannot run smoothly. The number of activities carried out by the CELSS waste bank cooperative such as socialization, training / guidance, operational waste management, urgently needs budget support from both the government and the private sector. In this study, researchers found that for 2018 the Manado CELSS waste bank cooperative received funding from the City of Manado and a Corporate Social Responsibility (CSR) grant from PT. North and Central Sulawesi Regional PLN.

There are two things that are analyzed regarding the factors that influence the garbage bank development program in the city of Manado, namely supporting factors and inhibiting factors. The form of analysis conducted is a qualitative method in the form of an interview which is then concluded by the safety pin. Furthermore the factors discussed are described as follows:

Analysis of Factors Affecting.

a. Supporting factors

The waste bank development program in Manado City is inseparable from a number of supporting factors including the role of the Government. As the Government of the City of Manado, especially those related to waste management, the Manado City Environmental Agency. The role of the government has the responsibility in providing infrastructure and facilities in waste management.

b. Obstacle factor

Observer factors for the development of the Manado City waste bank development program are:

1. The attitude and culture of the community that views that taking care of waste is work related to dirty matters is different from office work.
2. Consistency of the community to be involved in the waste management program sometimes fluctuates. Maintaining the enthusiasm of the community to sort waste in order not to go down because of the low value of waste is a major inhibiting factor in this garbage bank program. Moreover, the waste bank has 70 types of waste that must be disaggregated, this requires a long time and needs assistance in sorting waste.
3. The budget is also one of the factors inhibiting the success of waste bank activities. Without budget support, the program cannot run smoothly. The number of activities carried out such as socialization, training /

guidance, operational waste management requires budget support from both the government and the private sector.

CONCLUSION

The conclusions of this study concerning the three main objectives above can be concluded as follows:

1. Management and development of Garbage Banks in Manado City are carried out in accordance with Law No. 18 of 2008 concerning Waste Management, Government Regulation Number 81 of 2012 concerning Management of Household Waste and Trash of Similar Household Trash, Regulation of the Minister of Environment of the Republic of Indonesia Number 13 of 2012 concerning Guidelines for the Implementation of Reduce, Reuse, and Recycle through Garbage Banks, and Perda Kota Manado No. 10 of 2010 concerning Waste Management is a legal force that changes the perspective of waste management and the existence of a waste bank.
2. In developing the Manado Garbage Bank (BSM), it requires a lot of participation from the community so that the waste management program can run based on the 3R principle. As mandated in the Minister of Life's Regulation No. 13 of 2012 concerning Guidelines for the Implementation of Reduce, Reuse and Recycle (3R) Through Garbage Banks. Participation given by the community in the form of the obligation to sort household waste

in the form of organic and inorganic is carried out by the community itself.

3. In the implementation of the Manado Garbage Bank program, it is inseparable from several supporting and inhibiting factors. Supporting factors in the development of the Manado Garbage Bank are the role of the Regional Government as a Supporter of the implementation of the Garbage Bank Program and the awareness of a part of the Manado City Community that has been formed because basically the waste management activities through the Waste Bank provide a positive impact on various aspects as mentioned in the first point. As for the inhibiting factors there are a number of points including: a. awareness of some people who are still low, b. the number of Waste Bank activities that require a budget, so that requires a fixed budget every year from the Government, c. low trash value, d. competition between stalls.

As a suggestion of the results of research on the analysis of the development program for waste banks in the city of Manado researchers convey the following suggestions:

1. Formal communication within the company There is a need for ongoing support from the Manado City Government in developing the Manado Garbage Bank related to efforts to reduce waste generation in Sumompo Manado City Landfill, so that waste management in the Manado Garbage Bank is

maintained and reaches a common goal.

2. Increased socialization is not only related to inorganic management but also organic waste management by various methods, namely composer and takakura.
3. Optimizing the budget of the Manado City Government in developing the Manado Garbage Bank This is because many Manado Garbage Bank activities require development funds.

REFERENCES

- Buhaug, H., & Urdal, H. (2013). An urbanization bomb? Population growth and social disorder in cities. *Global Environmental Change*.
<https://doi.org/10.1016/j.gloenvcha.2012.10.016>
- Delgado, C., Rosegrant, M., Steinfeld, H., Ehui, S., & Courbois, C. (1999). *Livestock to 2020: The Next Food Revolution*, Food, Agriculture, and the Environment Discussion Paper 28. IFPRI FAO and ILRI Publication.
- Hammond, R. A. (2009). Complex systems modeling for obesity research. *Preventing Chronic Disease*.
- Rohr, J. R., & Martin, L. B. (2012). Reduce, reuse, recycle scientific reviews. *Trends in Ecology and Evolution*.
<https://doi.org/10.1016/j.tree.2012.01.012>

- Sands, P. (1992). The United Nations Framework Convention on Climate Change. Review of European Community & International Environmental Law. <https://doi.org/10.1111/j.1467-9388.1992.tb00046.x>
- Sattler, T., Obrist, M. K., Duelli, P., & Moretti, M. (2011). Urban arthropod communities: Added value or just a blend of surrounding biodiversity? *Landscape and Urban Planning*. <https://doi.org/10.1016/j.landurbplan.2011.08.008>
- Seadon, J. K. (2010). Sustainable waste management systems. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2010.07.009>
- Sidhu, M. K., Ravindra, K., Mor, S., & John, S. (2017). Household air pollution from various types of rural kitchens and its exposure assessment. *Science of the Total Environment*. <https://doi.org/10.1016/j.scitotenv.2017.01.051>
- Subba Reddy, M., Srinivasulu Reddy, P., Venkata, G., And, S., & Venkata Subbaiah, H. (2014). Effect Of Plastic Pollution on Environment. *Journal Of Chemical and Pharmaceutical Sciences*.
- Wolf, A., Vidlund, A., & Andersson, E. (2006). Energy-efficient pellet production in the forest industry - A study of obstacles and success factors. *Biomass and Bioenergy*. <https://doi.org/10.1016/j.biombioe.2005.09.003>
- Yadav, R. (2015). Solid waste management. *Pollution Research*.