

Waste Management System with 3R Principles Reused, Reduced, and Recycling in Malang City

Armanto Umbu Tamu

Master of Public Administration, University of Merdeka Malang, Indonesia

Corresponding author: E-mail: armanto.umbu9@gmail.com

ABSTRACT

Seeing the rapid development of the city of Malang and the high level of human mobilization that is increasingly out of control and the increase a population in Malang, both native Malang people and immigrant communities are significant and consistent as well as changes in people consumption patterns that indirectly increase the volume, type, and characteristics waste, even more diverse. This study aims to determine the waste management system with the 3R Reduce, Reuse, Recycle principle in Malang City. This research is descriptive qualitative using juridical and empirical approaches and selects several informants by purposive sampling and the data sources used are primary and secondary. The results of this study regarding the Waste Management Strategy with the Principle of 3R Reused, Reduced, Recycling in Malang City, concluded that several research indicators such as human resources need to be improved in quality and quantity in order to be able to create community skills that are able to utilize waste with high economic value. The amount and effectiveness of the facilities and infrastructure that support waste management need to be increased and the most important thing is to encourage community participation in waste management. If we look at the supporting factors for the waste management strategy in Malang City, namely skilled human resources, skilled human resources are the main choice in carrying out good waste management activities, it is necessary to do breakthroughs in the formation and training for community groups to have the ability to utilize waste available. There are inhibiting factors in the waste system of Malang City, namely the limited budget, facilities and infrastructure, as well as limited skills in capturing waste-based business opportunities. Suggestions that can be given are to encourage and form a community group called the Malang Waste Bank for welfare as an effort to mobilize and encourage the community by utilizing waste to improve the family economy.

Keywords: Principle of 3R; Reused; Reduced; Recycling; Waste management

©2020 Published by University of Merdeka Malang

1. INTRODUCTION

The rapid Malang city development is inseparable from the process of human mobilization that is getting out of control, the human mobilization that occurs is influenced by the availability of the abundant needs of the people in Malang city, both for jobs, food, and universal needs, the very progress of the city of Malang. Fast not only encourages human mobilization in general but encourages investors and business actors to do business in the city as the center of the regional economy, and the progress of Malang City greatly affects the level of public consumption which is getting higher, causing more and more waste to be produced. Therefore, it is not surprising that the piles of waste in every corner of the city are getting out of control, the number of immigrants to Malang City and it is likely that the waste generated is getting bigger too and therefore the government makes regulations governing the municipal solid waste system which is regulated in the city spatial planning. Malang about the municipal solid waste system, in this RT/RW encourages the government as regulators to act in managing the municipal waste management system and encourages the community or business actors to utilize waste for sale value, using the 3R, Reuse, Reduce and Recycle Principles by emphasizing community participation as an element important in waste management. The presence of RT RW rules that regulate the Municipal Solid Waste System is expected to be a direction in managing the management of waste management generated from the community and industry.

The increasing number of population in Malang City, both native Malang people and immigrant communities significantly and consistently as well as changes in public consumption patterns indirectly increase the volume, type and characteristics of waste, even more diverse. The waste problem that arises is essentially a national problem, which needs to be handled comprehensively and integrated. Waste processing is economical, healthy for the community, and safe for the environment, and can change people's behavior. This is in accordance with the 1945 Constitution of the Republic of Indonesia Article 28H paragraph (1), every person has the right to live in physical and mental prosperity, to live, and to have a good and healthy living environment and the right to obtain health services. (Niti, 2013). The idea of integrated waste management is implemented to reduce waste at the source. This means that the resulting waste must be recovered for reuse and recycling, so that only the residue is disposed of in the TPA (Final Processing Site). Output from processing is used as input in the process or converted into value-added inputs for other processes, maximizing resource consumption and increasing eco-efficiency (Ngoc & Schnitzer, 2009). Based on RI Law Number 18 of 2008 and PP RI Number 81 of 2012 mandating the need for a fundamental paradigm shift in waste management which is based on reducing and handling waste. Waste reduction activities are meaningful so that all levels of society, both the government, the business world and the wider community carry out activities to limit waste generation recycling and reuse of waste or better known as 3R (Reduce, Reuse, Recycle). In accordance with global trends, waste management systems are oriented towards sustainability issues, especially through the incorporation of 3R technology (Shekdar, 2009).

Based on the 3R principle, many programs are implemented in collaboration with the public and private sectors from a social, technological, economic, public health and political perspective. Problems regarding waste generation, composition, and characteristics are very supportive in developing a solid waste management system in an area, especially in residential areas. These problems must be available so that a good alternative waste management system can be developed. The amount of waste generation will usually be related to elements of waste management, among others, the selection of equipment, such as containers, collection and transportation equipment, planning of transportation routes, facilities for recycling, and the area and type of landfill. (Tri Padmi 2005). Utilization of waste as a resource can be a useful added value. This added value is a new approach or paradigm to not only slow down the rate of exploitation of natural resources but also the utilization of waste from the waste processing product itself. The proceeds from the sale of waste from the recycling process will provide a high enough selling value, such as plastics and paper. Besides that, there are many other ways to utilize and increase the selling value of the waste itself, for example the composting process, where 70% of the composition of municipal waste in Indonesia (volume) is wet waste (Damanhuri, 2006). According to the Central Statistics Agency (BPS), the amount of waste in 2020 in 384 cities in Indonesia will reach 80,235.84 tons every day, the waste generated from human activities is estimated that 4.2% will be transported to landfills (TPA), the result is about 37.6% of the waste that is burned, the waste that is disposed of in the river is 4.9% and about 53.3% is not handled. Of the 53.3% of waste that is not handled, it is abandoned in an unsanitary manner.

The city of Malang with a population of around 874,890 in 2020, of course, indirectly increases the volume and characteristics of the larger and more varied waste, in 2020 the waste produced in Malang is around 480-490 tons per day. This of course requires a good and solution management strategy. If you look at the 75 TPS in Malang City (TPS) with the transportation of around 38 waste trucks, it is not proportional to the amount of waste generated. To reduce the volume of waste in Malang City, Malang City Government has taken steps to minimize the waste problem, there are several steps such as the 3R concept (Reuse, Reduce and Recycle) so that Malang Waste Bank appears scattered in several points, the presence of Malang Waste Bank is not only minimizing waste but mobilizing a new economic wheel for the people of Malang City. One of the Waste Bank located in Sukun District which was established in 2010 has 30 thousand customers within 8 years. The customers consist of individual and group customers with the characteristics of waste in the canister. 70 types of waste that are ready to be recycled. Each type of waste has a different price, for example the gardus reaches Rp. 1,800 per Kg, while plastic bottles of the same type and color reach Rp. 3,500 per Kg. (Suryamalang.com). The phenomenon of the waste problem has become a serious problem in Malang City, where many trash cans are found scattered both on the streets, traditional markets and in large rivers, and the piles of waste in temporary dumps are getting bigger. This phenomenon is a study of how the implementation of regional regulations is the basis for the process of solving the waste problem. Thus looking at the problems in the description above, the problem formulations in this study are: (1) How is the implementation of the waste management strategy with the 3R principles of Reuse, Reduce and Recycle Malang City? (2) What factors support and hinder the implementation of the waste management strategy with the 3R principles of Reuse, Reduce and Recycle Malang City?

2. LITERATURE REVIEW

Public Policy

In simple terms policy is the basic concept of a government plan or public organization to regulate the public interest and the public. While in general, public policy is everything that the government does and does not do for the public interest. Everything that is meant is related to the interests of community life in an area. Public policies in a state context are set forth in laws, presidential decrees, regional regulations and those that are not written are part of public policy, these policies are made in order to achieve the goals of society. In other words, public policy is a decision that is carried out through deliberations between state institutions on the basis of the phenomenology of the state to create public welfare.

Public policy is a planned effort to change something in the context of the country's progress, according to Jones in Winarno (2012) the term policy is used in everyday practice but is used to replace very different activities or decisions. These decisions are often with goals, program or decisions, standards, proposals, grand design. In general, the term "policy" or "policy" is used to show the behavior of an actor (for example an official, a group, or a government official) or a number of actors in a particular field of activity (Winarno, 2012).

Basically the notion of public policy is quite multidimensional and its explanations vary widely. Anderson in Agustino (2008) provides a definition of public policy in his book public policy making as follows "a series of activities that have goals and objectives which are followed and carried out by an actor or a group of actors that are related to a problem or a matter of concern. " Public policy is a science that seeks to provide a scientific contribution to become a guideline in the implementation of development, in the public policy process it has a general aim to solve problems that occur. Agustino (2008) defines public policy as: "a series of actions or activities proposed by a person, group or government in a particular situation where there are obstacles (difficulties) and possibilities (opportunities) where the policy is proposed, in order to be useful in overcoming it to achieve the intended goal ". In essence, public policy becomes a direction of change where there are problems, there are policies, so that problems are closely related to policies, in an atmosphere that is not possible or the worst is that in an atmosphere of international emergency, policy actors cannot be separated from the world of policies. Meanwhile, public policy experts define that public policy is everything that is done or not done by the government, why a policy must be done and whether the benefits of living together must be a holistic consideration so that the policy contains large benefits for its citizens and small groups and so as not to cause harmful problems, this is where the government must be wise in setting a policy (Dye, 1992).

Policy Implementation

Policy implementation is one of the stages of public policy. Policy implementation is carried out after the existence of policy formulation as a measurable effort to solve the problem. Implementation is a series of activities in order to deliver policies to society so that these policies bring meaningful benefits to society. Van Meter and Horn states that policy implementation is an action taken by the government and the private sector, both individually and in groups intended to achieve goals. Grindle (1980) adds that implementation will only begin when goals and objectives have been set. The program of activities has been prepared and funds are ready and distributed to achieve the target.

Layout of the Spatial Plan

According to Herman Hermit, as the most basic principle of law, is justice, so the direction and framework of thinking and approaches in regulation (substance in legislation), including the law of Spatial Planning, must be embodied by the principle of justice "Based on article 2 of Law No. 26 of 2007 it is stated that the arrangement of space is carried out based on the principle:

Cohesiveness

The definition of integration is that the arrangement of space held by integrating multiple interests across sectors, across regions and stakeholder. The stakeholders include, among others, the government, local government and the community.

Harmony and balance

What is meant by harmony, harmony and balance is that spatial planning is carried out by realizing harmony between spatial structures and spatial patterns, harmony between human life and their environment, balance of growth and development between regions and urban and rural areas.

Sustainability

What is meant by sustainability is that spatial planning is carried out by guaranteeing the preservation and continuity of the carrying capacity and carrying capacity of the environment by taking into account the interests of future generations.

Empowerment and usefulness

What is meant by Empowerment and usefulness is that spatial planning is carried out by optimizing the benefits of space and resources contained therein and ensuring the realization of a quality spatial layout

Openness

What is meant by openness is that spatial planning is carried out by providing the widest possible access to the community to obtain information related to spatial planning.

Togetherness and partnership

What is meant by togetherness and partnership is a spatial arrangement carried out by involving all stakeholders

Protection of public interest

What is meant by protection of public interest is that spatial planning is carried out by prioritizing the interests of the community.

Legal certainty and justice

What is meant by the interests of law and justice is that spatial planning is carried out based on law/ statutory provisions and that spatial planning takes into account the sense of public justice and protects the rights and obligations of all parties fairly with a guarantee of legal certainty.

Accountability

What is meant by accountability is that spatial planning management can be accounted for, both for the process, the financing and the results.

Definition and Concept of Waste Management

Waste is a type of inanimate object resulting from human activities so that it is not used and disposed of. In Law No. 18 of 2008 Article 1 concerning waste management it is stated that waste is the residue of human daily activities or natural processes that in nature and semi-solid in the form of solid organic and inorganic substances which decompose or do not decompose and are considered useless and disposed of into the environment.

Waste management is all activities carried out to handle waste from the dumping to the final disposal. In general, waste management includes waste generation control, waste collection, transfer, processing and final disposal (Sejati, 2009). Notoatmodjo (2007) argues that waste management includes curing, transporting to destroying or managing waste in such a way that waste does not become a health problem for the community and the environment. In waste management, several important aspects must be passed, including:

Operational aspects

Technically it can be explained that the waste handling process includes several phases (Sejati, 2009: 32), namely: (1) The storage stage, where the community accommodates their respective trash in their trash. (2) The waste collection stage is the collection of local waste from waste-producing sources, for example settlements, markets, offices, schools and roads. (3) The waste removal stage, namely the waste is moved to a temporary shelter (TPS). (3) The collection stage, where the waste is transported by truck from the TPS to the TPA. (4) The final disposal stage, namely the disposal of waste at the final disposal location.

At the waste management stage, several types of technology can be applied that aim to reduce the amount of landfill, including the 3R (Reduce, Reuse, Recycle) concept of composting waste and the technology of converting waste into energy through both the methods *sanitary landfill* and *incinerator*. Limiting the results of waste (Reduce), namely by minimizing the items or materials used, the more we use the material, the more waste is produced (Sejati, 2009) besides that the community (consumers) can take advantage of existing waste by recycling or (Recycle) or reuse (Reuse). For recycling, not all items can be recycled, but now there are informal or household industries that use waste into other items. (Sejati, 2009). Meanwhile, reuse can choose items that can be reused, meaning that we must avoid using items that are only disposable and then discarded.

Institutional Aspects

Institutional Government institutions that are responsible for the solid waste sector are the driving force or as the overall initiator in waste management from the source to the TPA. Institutionally it has a sustainable function in managing the solid waste system in the city. The capacity of the dam, the authority of the waste management institution, is a very important miniature because of the large responsibilities that must be borne and carrying out the usual management, which is not as simple as it is even tends to be quite complex in line with the growing category of cities. In some areas, waste management is generally carried out by the Sanitation Office. The involvement of the private sector and the most important thing is

the involvement of the community for the benefit of handling waste is an important point that must be done, the community is mostly involved in the waste collection sector at the source of landfills, while the private sector generally manages solid waste in elite areas where the ability to pay from consumers is very high.

Financing aspects

Waste management in urban areas is inseparable from funding as an important source in mobilizing existing resources. The financing aspect is aimed at financing waste management operations starting from the source of waste or sweeping, collection, transfer, transportation, processing and final disposal. Solid waste management funds come from local governments or from waste services re-distribution from consumers.

A common problem that is often encountered in the sub-financing system is that the collection collected is very limited and not proportional to operational costs, so that the cost of waste management is still a burden on the APBD. In general, the low cost of solid waste management is due to the problem of urban solid waste that has not received serious attention, so that it has an impact on the poor quality of waste management including environmental pollution in the TPA. To increase operational budget support for waste management, the government needs to empower the community to convert waste into something that has economic value, this is closely related to the role of the community in handling waste in their environment.

Aspects of Community Participation

The essence of waste management is the community, here the community must be the main mover in the environmental movement of waste management, in a long-term waste management strategy, the active role of the community is an important foundation for the success of waste management, therefore it is necessary to have awareness and willingness to participate. so that the role of the community can run optimally. In addition, it is also necessary to change community traditions, build a new paradigm for society that waste has more potential in the economy and provide skills to the community in processing waste. The advantage that will be obtained if the role of the community is maximized is that the volume of waste disposed of to the TPA is decreasing, besides that the community can also be creative in managing waste so that the waste has economic value. In the long-term program, households are advised to manage their own waste through the 4R program (Sejati, 2009) as for the 4R principles that can be applied in everyday life, namely: (1) Reduce. The minimization of the goods or materials we use, the more material we use, the more waste is generated. (2) Reuse. Choose items that can be reused. Avoid the use of items-disposable (disposable, throw). This can extend the time to use the item before it becomes trash. (3) Recycle. Not all goods can be recycled, but currently there are non-formal industries and households that use waste into other goods. (4) Replace. Use environmentally friendly items, for example a plastic bag instead of a basket and don't use *Styrofoam* because these two items don't degrade naturally.

Regulatory Aspects

Regulations are an important instrument in waste management, with the existence of regulations, the community must comply with existing rules as a form of healthy living. The regulations that support waste management are based so that waste management can run properly so that it does not cause problems. These types of regulations are usually in the form of Regional Regulations and require strict sanctions, lack of public education related to healthy living habits from an early age and not effectively applying legal sanctions from existing Perda. In fact, maybe the community is not fully aware of the provisions in waste management including the existence of immediate legal sanctions, so that waste management is not yet effective, as well as sanctions for rewards for the community should be set in regulations, so that society is dynamic and can make a positive contribution to management. trash.

3. METHODS

In this study the author uses a qualitative approach. According to Sugiono (2009) qualitative research is a research method based on post positivism, used to examine the conditions of natural objects where the researcher is the key instrument, sampling data sources are carried out positively, the collection technique with triangulation, data analysis is qualitative inductive and the results of the research emphasize meaning rather than generalization, qualitative research rests on holistic natural background research, position humans as a research tool, perform inductive data analysis, more concerned with process than the results of research carried out agreed by researchers and research subjects. The choice of a qualitative approach in this study is based on the reason that the problems studied in this study require

actual and conceptual field data. In addition, the qualitative approach is more sensitive and more adaptable to a lot of sharpening and joint influence on the value patterns faced in changing situations during the study (Moleong, 2007).

4. RESULTS AND DISCUSSION

Human resources are an important element in waste management, in this effort HR is seen as a regulator and implementation of policies in order to be able to make organizations more contributive and able to become a solution for every waste problem faced. important that determines the effectiveness and efficiency of an organization for specific purposes. The problem of waste in Malang City is a serious problem so it is important to have synergy between the government of Malang City Environmental Service and elements of society as part of the solution to the waste problem. If you look at the existing data, the amount of waste produced in Malang City is around 480- 490 tons per day and the TPS in Malang City is not up to 100, this is not balanced with skilled human resources in managing such a large amount of waste. So it is important to carry out community empowerment policies that are engaged in managing waste problems.

Table 1. Amount of Waste Management Apparatus

Waste Management Apparatus	Amount
Hygiene Officer (Yellow team)	786 people
Composting unit personnel	58 people
Landfill Operation	18 people
Number of waste bank officer	32 people

Based on the Table 1, in quantity, there needs to be additional personnel, especially in field sectors such as cleaners, composting unit personnel, the composting unit which only has 58 personnel, of course it is not balanced with the rate of increase in waste, there is a need for additional personnel so that the number of personnel will be faster in performing tasks - tasks in terms of environmental cleanliness in Malang City. For cleaning staff, 786 of them will be able to carry out activities to solve the waste problem.

Facilities and infrastructure

Facilities and infrastructure are the most important part in supporting the community to carry out waste management activities, the facilities needed in carrying out waste management are means of transportation for waste management, TPA, TPS and TPA facilities as well as community support facilities in waste management using the Recycling Method which is known as the Malang Waste Bank. The availability of facilities for the Malang Waste Bank is of course very important and as a new solution in the processes of solving the waste problem in Malang, the Waste Bank has presented it as a solution for the waste problem, where BSM is in an important position as a solution to the waste problem and also as an economic breakthrough The magic of the community, this is important in the situation of a city surrounded by waste problems.

Table 2. Amount of Facilities and Infrastructue

Facilities and Infrastructure	Amount
Facilities TPS	72
Facilities, TPA	1
Facilities, Dump Truck	18
Facilities, Arm Roll	17
Facilities, Composter Unit Facilities	13

Based on Table 2, discussion that the facilities and infrastructure are one of the supports in waste management in Malang city, if viewed in quantity, it is important to procure facilities which are waste processing into useful items, for example, Composter, which numbered 13, needs to be added to have capacity. larger processing, with an increase in the number, it will open up great opportunities to minimize the existing waste problem.

Based on Table 3, the availability of a waste bank in Malang City influences the new mindset of the community in the context of waste management in Malang City, the presence of this Bank will move the community to get involved in the activities of the Malang Waste Bank, Malang Waste Banks are scattered throughout the Districts in Malang City, based on the quantity of Waste Banks In Malang, Sukun Subdistrict is in first place as a District with the largest number of Waste Banks in Malang City with 29 units and followed by Klojen and Lowokwaru Subdistricts with 22 units, Blimbing Subdistrict has 10 units of Waste Banks and Kedungkandang District with 8 units.

Table 3. Waste Bank Facility

District	Amount
Malang Waste Bank District Sukun	29
Malang Waste Bank District Klojen	22
Malang Waste Bank District Lowokwaru	22
Malang Waste Bank District Blimbing	10
Malang Waste Bank District Kedungkandang	8

Society Participation

The community is the core of solving the waste problem so it is necessary to involve the community in waste management, community involvement in waste management can be in the form of controlling the use of single- use materials, involving the night community using waste as a new economic source, here the community is encouraged to utilize plastic waste so that recycle. Community participation in waste management through the Malang Waste Bank (BSM) is quite effective in minimizing waste problems. Community participation in waste management is quite effective because management activities are based on decisions made by the community itself, where community involvement in waste management is driven by their awareness of that participation. The role of the parties concerned is only to provide stimulus / support according to the needs decided by the local community. Community participation is in the entire waste management process, starting from decision making in identifying problems and needs, planning programs, implementing programs, and in evaluating and enjoying program results. Waste management activities with the 3R Principle have been implemented in several areas in Malang City. The implementation of the 3R Principle is more predominantly carried out by recycling activities (Recycle), this activity is carried out at the Malang Waste Bank (BSM), Malang Waste Bank was established in several sub-districts in Malang City such as, Malang Waste Bank, Sukun District which was founded in 2010 with a total customers of about 30 thousand customers. Waste Bank Malang, Klojen District, with a total customer base of around 50 families. The Malang Waste Bank, which is located in Blimbing District, which was established in early 2020, continues to disseminate information to the Blimbing community about Malang Waste Bank, almost all of the Districts in Malang City have a Waste Bank, this positive thing needs to be broken into so that people are involved in waste management through the Malang Waste Bank.

The application of the 3R concept in Sukun District has been running for 11 years, activities are quite productive both as customers and the community or employees as managers of the Malang Waste Bank, the Sukun Community have carried out waste sorting and ended with waste decomposition. This means that the people in Sukun District already understand the purpose of the 3R concept. By applying the 3R concept, waste can be maximally utilized. Organic waste can be processed into compost, and inorganic waste can be used again into useful items, crafts or sold to the Waste Bank. The community understands that the purpose of implementing the 3R concept is to reduce waste from the source, to reduce environmental pollution due to untreated waste. Waste that is not sorted is difficult to decompose because it contains inorganic materials that are not weathered by nature, and can even contain hazardous and toxic materials that can reduce the health of the community.

Community involvement in waste management through BSM will create a new color in waste management, where the community will actively sort the waste in their environment so that in a planned way the community is able to carry out a good waste management policy, after routine sorting will encourage the creation of an economy. new to their families, if viewed in quantity, that the people of Malang City who participate in Waste Management are still below average, meaning that there are still many people who have not been actively involved in the Malang Waste Bank.

Supporting factors for waste management with the 3R principle

Below are the factors that support the waste management strategy with the 3R Reuse, Reduce and Recycle Principles in Malang City: *first*, skilled human resources. Skilled human resources are the main choice in carrying out good waste management activities, it is necessary to do breakthroughs in the formation and training for community groups to have the ability to utilize existing waste, if seen in Malang City that the level of community skills in management is very low. It is proven that in the daily activities of the majority of the consumption community, they do not reuse materials that can be used again (Reduce). This is a serious problem that must be resolved so that people have a concern for their environment, therefore it is necessary to take a solution to be able to solve these problems. To support a skilled community, it is necessary to carry out educational activities: (a) The extension stage, this stage is carried out after the socialization, in this stage, several areas in Malang City, the community is given information about the negative impact of waste that is not properly managed, starting from health impacts, social impacts, and long-term impacts on the environment. In this stage, the community is also taught to sort

organic waste and inorganic waste, inorganic waste is re-sorted into inorganic waste that can be recycled, and inorganic waste that cannot be recycled. This is intended so that the volume of household waste disposed of in landfills gradually decreases in volume. (b) The training stage, at this stage the community is given education on new paradigms and insights that plastic waste produced by households can become raw materials for handicrafts that have economic value and technical guidance in recycling waste. In the training held in collaboration with the Malang Waste Bank to provide knowledge about the importance of waste management. *Second*, the existence of composition. Waste management activities by prioritizing the composition system are carried out so that the people of Malang City compete to make their environment a clean and comfortable environment, an environment with the best waste management, so that composting activities need encouragement so that Malang Waste Bank continues to be built to be integrated. with the composition system in protecting the environment from waste problems. *Third*, Regulations (rules) In the city of Malang itself, there are three rules that discuss the problem of waste, with this rule, we hope that it will be able to minimize the waste problem in Malang City, there are several regulations that discuss waste, the first is Perda No. 10/2010 concerning waste management, Perda No. 4 of 2011 concerning RT/RW and Perwali, No. 31 of 2016 concerning the position, organizational structure, duties and functions and work procedures of environmental services. If seen in its implementation, it has not been running effectively, so it needs firm steps from the government to encourage and make people aware of their concern for their environment. From policies there are also policies.

Inhibiting factors for implementing a waste management strategy based on the 3R principle.

Factors that hinder waste management with the principles of Reuse, Reduce and Recycle are: *First*, limited skills, the phenomenon of the waste problem has become a classic phenomenon where the most effective way of handling has not been found, besides that the public's concern for waste management is still very low, so that it indirectly effects on the competence of the community. This waste problem becomes a serious problem for the local government of Malang City because it views Malang as a destination city, therefore it is important that the skills of the community or groups of waste business actors, be it organic and inorganic waste, Malang City can produce waste around 480-490 tons/day, therefore it is necessary to form groups or BSM to accommodate the community in waste management. With the existence of BSM, it will build new skills for the community, because it needs to be known that in Malang City, people who have a pregnancy in processing waste are only owned by Malang Waste Bank employees and DLH employees (*Angkatan Kuning*). *Second*, the facilities and infrastructure that support waste management are still very limited and not balanced with the volume of waste produced, the amount of waste produced in Malang is around 490 tons per day, it is necessary to have adequate facilities in managing the waste problem. be it storage facilities and waste processing facilities, waste management facilities are very important objects of study in order to minimize waste problems in Malang City, there are two waste management in Malang, namely Final Disposal Sites and BSM (Malang Waste Bank). BSM is very important to be developed in terms of quality and quantity, that with the presence of this BSM has changed the paradigm of society regarding waste, here the community takes part in utilizing the existing facilities using the waste bank method. So it is important to do it is to continue to encourage the existence of BSM in every area of Malang City so that community movements that care about the environment can increase. *Third*, budget, budget is an important element in supporting the success of the Malang Waste Bank activities, without budget support the waste management activities programs cannot run smoothly. The number of activities carried out by BSM such as socialization, training/coaching, waste management operations, etc., really need budget support from both the government and the private sector. In this study, BSM received a grant from the Malang City Government and a Corporate Social Responsibility (CSR) grant from PT. PLN East Java Distribution. Malang City is in second place as a recipient area for Regional Incentive Fund (DID) in the field of waste management with a total of 9.6 billion. And the central government made Malang City a pilot area in waste management. If we look at this fantastic budget, it is not enough for waste management in Malang City.

5. CONCLUSION

In the process of implementing a waste management strategy with the principles of 3R, Reuse, Reduce and Recycle in Malang City, there are still many obstacles that are faced so that they have an impact on waste management by reducing, reusing and recycling existing waste, waste handling services namely solid waste services are still not optimal, due to minimal budget constraints, so that waste handling is not maximized, there are still relatively few people who are actively involved in handling waste management using the 3R method; The old paradigm still settles in people's heads that waste is still viewed as rubbish and is simply thrown away or has no value. The implementation of the waste management strategy with the

3R principle is analyzed with several variables that have been developed. These variables include Human Resources, Facilities and Infrastructure, Community Participation, Regulation and Budget. Human Resources who handle waste problems, both bureaucratic human resources and community resources are still quite limited, there needs to be an increase in quality and quantity, human resources who handle waste problems in Malang City are still quite good, around 786 (yellow troops) in Malang City. , who on average are tasked with sweeping, transporting and disposing of waste, and around 32 Waste Bank employees who are categorized as skilled human resources, therefore it is necessary to increase the capacity of institutional human resources and community resources. Facilities and infrastructure that support waste management are still very limited and not in balance with the volume of waste produced, the amount of waste produced in Malang is around 490 tons per day, so it is necessary to have adequate facilities in managing waste problems, be it storage facilities and facilities. waste management, waste management facilities are very important objects of study in order to minimize waste problems in Malang City, there are two waste management in Malang City, namely Final Disposal Sites and BSM (Malang Waste Bank). Community participation is a vital object in the waste management process, starting from decision making, identifying problems and needs, planning programs, implementing programs, and evaluating and enjoying program results. Community involvement in activities to reduce the use of disposable materials is still low, the use of waste is still low and the activity of recycling waste is still low, these three points are actually the core and the bridge for the community to be involved in waste management in Malang City, it is important to carry out activities Encouraging the community to be a part of the 3R principles in minimizing waste problems, it is hoped that this 3R will be able to generate people who live cleanly and are oriented towards improving the economy through waste.

The government is a bridge for the community to be actively involved in waste management, the government must routinely conduct education for the community so that they have extensive knowledge about waste in Malang City, here the local government not only conducts education, but the local government must facilitate the community to have a place to carry out management activities. waste, the government as the regulator is important to pay attention to scavengers as objects that play an important role in waste management, involve and facilitate them to become part of the handling of waste problems in Malang City. Regulations and budgets, waste management activities in Malang City have not run optimally because it is seen from the perspective of its implementation that there is no strict rule that can overcome the increase in society in using disposable materials. Budget is also a major problem in waste management in Malang City, although there are grants given to Malang city government, the existence of financial assistance has not been able to solve the waste problem in Malang City.

REFERENCES

- Agustino, L. (2006). *Basics of Public Policy*. Bandung: CV. Alfabeta.
- Winarno, B. (2012). *Public Policy Theory, Process, and Case Studies*. Yogyakarta: CAPS.
- Dye, T. R. (2005). *Understanding Public Policy*. Eleventh Edition. New Jersey: Pearson Prentice.
- Damanhuri, E., & Patmi, T. (2005). *Education and training courses TL-3150 Waste Management*. Department of Environmental Engineering, FTSP ITB.
- Sejati, K. (2009). *Pengolahan Sampah Terpadu*. Yogyakarta: Kanisius.
- Niti, B. (2013). *Waste Management Household*. 2(12).
- Notoatmadjo, S. (2007). *Health Public Sciences & Arts*. Jakarta: PT. Rineka Cipta.
- Ngoc, U. N., & Schnitzer, H. (2009) Sustainable Solution for Solid Waste Management in Southeast Asia Countries. *Waste Management*, 29, 1982-1995
- Sugiono. (2011). *Research Quantitative & Qualitative Methods and R & D*. Bandung: Alfabeta.