

Socialization of Waste Handling Using the Concept of Reduce, Reuse, Recycle and Replace (4 R) to the Community in Kastela Village

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Abstract

Waste is the residue of various human activities, both in the form of consumption and development activities. The purpose of this activity is to educate the community in order to be able to handling of these residual materials so as to reduce the negative its negative impact, both on society and the environment. This activityThis activity was carried out by counselling a group of people by presenting various practices on how to handle waste that have been done in many places, known as in various places, which is known as the concept of the 4 R's, namely reduce, reuse, recycle, and replace.

INTRODUCTION

Garbage is a big problem in most cities today. This is because every activity carried out by humans will always produce residue in the form of waste. The result is that every day the amount produced continues to increase, while in some communities this waste becomes leftover goods that cannot be used anymore. Therefore, over a long time it will accumulate and become a serious problem. In some areas that cannot yet utilize it, the only way is to continue disposing of it in one location which is usually called a final disposal site (TPA). Apart from the accumulation continuing to increase, the handling costs are also not small.

In some areas that already have relatively good handling methods, this waste is managed according to the characteristics of the waste. Therefore, the handling is carried out from the community, namely by educating the community to be disciplined in disposing of waste in the places provided. In fact, not only that, people have become accustomed to disposing of waste according to type and group. For this reason, in public places that are frequently visited by the public, containers are provided for various types of waste.

Broadly speaking, it is grouped into two types, namely organic waste and inorganic waste. Organic waste is waste that comes from the remains of living creatures such as plants and animals. Meanwhile, inorganic waste is waste in the form of waste originating from various synthetic materials [1]. Organic waste is generally waste left over from household activities and will decompose quickly naturally. Meanwhile, inorganic waste is mostly leftover products produced by industry which are used for various societal needs. This waste generally takes a long time to decompose.

With such a handler, in turn there will be only a small amount of waste left which will be disposed of at the landfill site. Because some waste can still be processed according to the circumstances. For example, some waste can be recycled for various industrial needs, such as plastic bottles, some can also be converted into various planting containers and various other purposes. There is even waste that can be turned into compost and fertilizer for agricultural plants. With a model like this, efforts to handle waste using the 3 R approach, namely reduce, reuse and recycle are expected to help existing waste handlers [2]. In fact, currently another approach has emerged which makes the 4 Rs, where another addition is replaced, namely by using things that are considered to reduce waste, such as replacing plastic bags with baskets [3].

Regions or cities that have a large enough budget can certainly utilize technology in handling their waste. Likewise, you can collaborate with parties who care about the environment. So that the various phases of waste handling can be carried out better. For example, in the earliest phase, there is increasing public awareness regarding waste. In areas that have sufficient budget allocation, outreach is routinely carried out to the public so that they have good awareness regarding waste handling. There will also be various facilities of good quality and sufficient quantity available in various places. Sufficient vehicles and personnel are certainly available at all times for handling waste. The landfill location is sufficient and handled well. Likewise, the availability of technology can be used in waste management so that it can be reused according to the characteristics of the waste produced.

Several areas in Indonesia that are considered quite advanced in handling waste are Bali, Banda Aceh, Surakarta, Poso, Baubau, Banjar

Baru City. There are even cities that have succeeded in processing waste into income, namely Surabaya, Balikpapan and Banyuwangi (IDN Times, Tuesday, 20 October 2024)

The waste problem includes 3 parts, namely downstream, process and upstream. Downstream, waste disposal continues to increase. In the process part, there are limited resources from both the community and the government. In the upstream part, in the form of a less than optimal system applied in final processing (Mulasari, 2016). Most people consider burning waste to be part of waste processing. However, things like that can cause pollution to the environment and harm health. This kind of attitude is likely influenced by knowledge and age maturity [4]

For the city of Ternate currently, there are no well-organized efforts to handle waste properly. Almost all waste produced by all households is considered dirt or waste that must be thrown away. This kind of view causes handling to become increasingly difficult day by day. Currently, the volume of waste produced by households in Ternate City ranges from 180 - 200 tons per day (mediamu, 14 July 2024). With such a large number, you can imagine how heavy the burden this island city must bear. This number continues to increase significantly from time to time. Therefore, it is necessary to carry out studies based on theory and various practices in various regions so that they can be implemented in the current socialization program for waste management in Ternate City.

Likewise with the environment in the Kastela sub-district which is located in the Ternate Island District area. This area is an area that is growing quite rapidly. Marked by the emergence of new housing developments. This of course has an impact on the environment. This includes the impact of waste which has so far received little priority. Some of the residents' habits that also play a role are the habit of throwing garbage anywhere. One of them is in Barangka (dead river). Which, if it rains, will come down around the beach. The result is littering around Kastela beach.

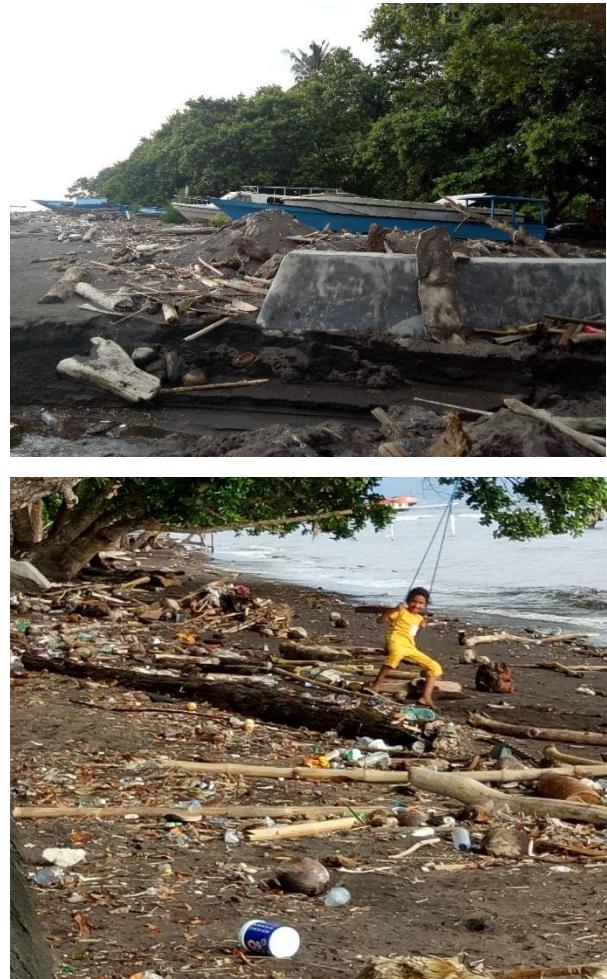


Figure.1 Condition of Garbage on Kastela Beach After Rain

LITERATURE REVIEW

1.1. Rubbish

Waste is an object or material that is no longer used by humans so it is thrown away [4]. Based on this definition, the definition of waste covers a very broad concept. Because all used goods that are no longer used fall into this category. Furthermore, regarding the definition of waste [5], waste is grouped into two groups, namely organic waste and inorganic waste. u organic waste consisting of food waste, waste from the yard and inorganic waste consisting of plastic bottles, plastic bags, leftover detergent wrappers or food wrappers, Styrofoam and drink cans.

Based on the observation results, information was obtained that village residents did not have trash bins to carry out the collection process, so residents were accustomed to throwing trash carelessly and burning it around the house. This makes it difficult to implement waste sorting. Due to the absence

of temporary waste disposal sites, residents dump large-scale household waste on empty land or ponds which are used as final disposal sites. The lack of and expensive land means that Rumbuk Village does not have a place for final disposal. Difficult access in and out of the village makes it difficult for residents to carry rubbish to the final disposal site. Public awareness of environmental cleanliness is still lacking so the waste problem is still considered normal. Several factors that influence waste processing which are considered as obstacles to the system are population distribution and density, socio-economic and physical environmental characteristics, attitudes, behavior and culture in society. Based on the Regulation of the Minister of Public Works of the Republic of Indonesia number 3 of 2013, a temporary storage area (TPS) is a place where waste is transported before it is transported for recycling, processing and an integrated waste processing site. An integrated waste processing site (TPST) is a place where collection, sorting, reuse, recycling, processing and final processing activities are carried out. Community participation in waste management is the community's willingness to help the success of the waste management development program according to each person's abilities without sacrificing their own interests. Without community participation, all planned waste management programs will be in vain. One of the community's approaches to help government programs succeed is to accustom the community to behavior that is in accordance with the waste program, namely changing the community's perception of orderly, smooth and even waste management, changing people's habits in poor waste management and local social, structural and cultural factors (Affandy et al., 2015)

The typology of community participation which can be seen as a process of community participation is as follows: (1) manipulation, manipulation is the lowest level of community participation. At this level, the public is only placed as members and is only used as a means of publication by the authorities. (2) therapy, the activities carried out at this stage are only an attempt to change people's mindset, not to get suggestions and input in creating development programs. (3) informing, this stage is the initial stage of communication with the community, namely providing

knowledge about the rights, responsibilities and choices that the community can take to develop themselves. (4) consultation, this step is an important stage in achieving two-way communication with the community, where input from the community becomes program ideas for development. (5) placement, appointment of several influential communities in their environment to become working bodies. This system allows community proposals to be put forward well through their representatives. (6) partnership, there is a division of power between the community and the program initiator. Both agreed to share responsibility for both the planning process and problem solving. (7) delegated power, at this stage the community is given the authority to make decisions/programs according to their needs. The community has full authority to create development programs. (8) citizen control, at this stage the community can regulate programs, institutions and controls for the benefit of the community itself [6].

1.2.4 Rs concept

In waste handling, one of the known methods is the 4 R method, namely reduce, reuse, recycle and replace. [7] said that the implementation of the reduce concept can be done by avoiding the use of goods or products that have the potential to produce a lot of waste, avoiding the use of goods that are only disposable, using products that use a refill system, and using products that produce inorganic waste such as plastic, Reuse according to [8], is this step which emphasizes the reuse of waste that has the same or different functions which can be done by using cans as pencil cases, using tubs as flower pots, using plastic bottles as flower vases, and others. So this method requires two very basic things, namely creativity and high commitment. This is because there is a view of some people who always consider all waste to be goods that no longer have any use value and see it as a source of all kinds of diseases. In fact, with proper handling by people who have a high level of creativity, used goods can be transformed into something that has a use value that is no less than new goods. Likewise, the attitude of commitment must always be improved because if we do not take a caring attitude, our environment will experience increasingly severe levels of degradation.

Recycle, [9] that the concept of recycling is a fairly familiar concept, which can be done by processing organic waste to become fertilizer and inorganic waste to be reprocessed in various ways.

According to [10], there are two additional activities that can be carried out in handling waste outside what is commonly known as the 3 Rs, namely replace and replant. In replacement activities, namely using various equipment in activities that are more environmentally friendly and do not always produce waste. Such as using baskets in various daily activities to replace plastic bags, or you can also use plastic bags repeatedly. The use of leaves in wrapping various goods, and so on. Meanwhile replant is a concept for replanting.

METHOD

1.3. Place of Implementation of Activities

This activity was carried out in Kastela Village, Ternate City, which is not too far from the Khairun University campus. As seen in the following picture:



1.4. Implementation of Activities

Activities are carried out in the form of outreach, namely by gathering participants and then providing enlightenment about the need to handle waste in their living environment. Namely in the RT and RW areas of Kastela Village. A total of ten people were used as participants in the activity. The scope of the material presented is in the form of an explanation of waste and its categories. How to handle the two types of waste and their use. Apart from that, this activity also included visits to sample gardens.



1.5. Equipment Used

To be able to implement the outreach material provided in this activity, participants were also given instructions on how to use this waste for several activity purposes, for example used drink bottles as containers for planting various plants. Also how to make compost from leaves around each house.



BIBLIOGRAPHY

- [1] M. R. S. Adzim, U. I. Khuzaimah, and I. Hidayah, "Pemanfaatan Sampah Organik dan Anorganik Sebagai Upaya Peningkatan Kreativitas Masyarakat," *J. Educ. Res.*, vol. 4, no. 1, pp. 397–403, 2023.
- [2] R. B. Utomo and M. I. Muttaqijn, "Studi Komparasi Pengelolaan Sampah di Kabupaten Banyumas Dengan Kota Tangerang," *J. Pembang. Kota Tangerang*, vol. 1, no. 2, pp. 106–124, 2023.
- [3] S. Hardiatmi, "Pendukung Keberhasilan Pengelolaan Sampah Kota," *J. Invormasi Pertan.*, vol. 10, no. 1, pp. 50–66, 2011.
- [4] M. Z. Elamin *et al.*, "Analysis of Waste Management in The Village of Disanah, District of Sreseh Sampang, Madura," *J. Kesehat. Lingkungan.*, vol. 10, no. 4, p. 368, 2018, doi: 10.20473/jkl.v10i4.2018.368-375.
- [5] M. A. Dkk, "Edukasi Mengenai Pentingnya Pemilahan Serta Pengolahan Sampah Untuk Mengurangi Dampak Negatif Terhadap Lingkungan," *Darmabakti J. Inov. Pengabd. dalam Penerbangan*, vol. 4, no. 1, pp. 11–17, 2023, [Online]. Available: <https://ejournal.poltekbangplg.ac.id/index.php/darmabakti/article/view/108>
- [6] M. Rapii, M. Z. Majdi, R. Zain, and Q. Aini, "Pengelolaan Sampah Secara Terpadu Berbasis Lingkungan Masyarakat Di Desa Rumbuk," *Dharma Raflesia J. Ilm. Pengemb. dan Penerapan IPTEKS*, vol. 19, no. 1, pp. 13–22, 2021, doi: 10.33369/dr.v19i1.13201.
- [7] J. Junaidi and A. A. Utama, "ANALISIS PENGELOLAAN SAMPAH DENGAN PRINSIP 3R (Reduce, Reuse, Recycle) (Studi Kasus Di Desa Mamak Kabupaten Sumbawa)," *JISIP (Jurnal Ilmu Sos. dan Pendidikan)*, vol. 7, no. 1, pp. 706–713, 2023, doi: 10.58258/jisip.v7i1.4509.
- [8] Rizky Maharja, Ade Wira Lisrianti Latief, Sri Novianti Bahar, Helmy Gani, and Sitti Fatimah Rahmansyah, "Pengenalan Pengolahan Sampah Berbasis 3R pada Masyarakat Pedesaan sebagai Upaya Pengurangan Timbulan Sampah Rumah Tangga," *J. Abdimas Berdaya J. Pembelajaran, Pemberdaya. dan Pengabd. Masy.*, vol. 05, no. 01, pp. 62–71, 2022, [Online]. Available: <https://pemas.unisla.ac.id/index.php/JAB/index>
- [9] A. Kristianto P and F. Rosariawari, "Penerapan Konsep Pengelolaan Sampah Rumah Tangga Dengan Metode 5R (Reduce, Reuse, Recycle, Replace, and Replant) Berbasis Masyarakat Di Wilayah Kebraon Kota Surabaya," *Envirous*, vol. 2, no. 2, pp. 63–69, 2023, doi: 10.33005/envirous.v2i2.112.
- [10] E. Ri. Meiwinda, M. Fadhli, R. Hasibuan, and A. Zikri, "Pengolahan Sampah Berbasis 5R (Reduce, Reuse, Recycle, Replace, Replant) Sebagai Implementasi Mata Kuliah Kewarganegaraan Di SD Negeri 137 Palembang," *J. Dehasen Untuk Negeri*, vol. 3, no. 2, pp. 241–246, 2024, doi: 10.37676/jdun.v3i2.6434.