DEVOTION
Journal of Community Service
Volume 3, Number 4, February 2022
e-ISSN: 2797-6068 and p-ISSN: 2777-0915

COMMUNITY EMPOWERMENT THROUGH WASTE MANAGEMENT WITH REDUCE, REUSE AND RECYCLE SYSTEM (3R) IN BULOTA VILLAGE

Asni Ilham[1], Misran Rahman[2], Warni Tune Sumar[3]
Fakultas Ilmu Pendidikan, Gorontalo State University
ilhamasni59@gmail.com[1], misran@ung.ac.id[2], warnisumar@ung.ac.id[3]

KEYWORDS
Waste Management, 3r System, Reuse, Reduce, Recycle

ARTICLE INFO
Accepted: February, 2nd 2022
Revised: February, 11th 2022
Approved: February, 11th 2022

ABSTRACT
Waste processing in Bulota Village, Talaga Jaya District is very necessary considering the limited infrastructure and waste processing facilities in the surrounding area, which are unable to contain existing waste processing. This demonstrates the paucity of garbage processing facilities and residents' lack of waste sorting knowledge (organic and inorganic). The impact is that a lot of paper and plastic waste accumulates into useless waste. One of the waste management models is the 3R system, namely Reuse, Reduce and Recycle. Waste will have various negative and very large impacts if the handling is not carried out carefully and seriously. This results in changes in the environmental balance that are detrimental to the community. The results of observations carried out by the service team from the State University of Gorontalo in the field show that most of the total The head of the family and surrounding villagers in Bulota Village have not been able to separate waste (organic and inorganic) due to limited public knowledge and level of understanding of waste accumulation.

INTRODUCTION

One indicator of the level of disaster risk in an area can be seen from the level of environmental damage that occurs in the area (Shi et al., 2010). Environmental damage can occur due to waste that is allowed to accumulate and cannot be fully processed by humans (Fatia & Sugandi, 2019). Therefore, there is a need for public awareness not to add to environmental damage, especially because it is caused by waste. As in other areas in Gorontalo Regency and even Gorontalo province, the problem of waste is still prominent in the community, including in Bulota village. Bulota Settlement is a village in the Gorontalo Regency Government zone, located in the Talaga Jaya District, near the beaches of Lake Limboto, where waste from downstream is dumped. Bulota Village is based on the high production of community waste in various circles, both industrial waste and household waste, resulting in the accumulation of waste. Problems that are quite crucial in terms of waste in Bulota village include the tendency of people to still dispose of garbage inappropriately, some even throw garbage in ditches, burning garbage improperly so that it pollutes the air, and improper waste management, meaning that they do not know types of waste and waste segregation rules.

Bulota Village, which is included in an area where there is no waste processing site, is one of the many villages that need infrastructure and facilities for waste processing. The

results of observations carried out by the service team from the State University of Gorontalo in the field showed that most of the heads of families and surrounding villagers in Bulota Village had not been able to separate waste (organic and inorganic) due to limited public knowledge and level of understanding of waste accumulation. and immediately throw trash anywhere. The problem is that public awareness of the environment is the main problem faced by the people of Bulota village the community understands and understands environmental awareness quite a lot and is adequate, but they need assistance to realize a healthier and orderly environment with a waste processing site. Many housewives have ideas related to the benefits of recycling from waste, but there is no training in making recycled products so they have not been able to do it. This service activity focuses on trash management training using the 3R system (Basriyanta, 2007; Wildawati & Hasnita, 2019). It is managed by PKK members in Bulota village cooperatively. It can be identified that the partners' problems are: (1) Awareness of the villagers regarding the benefits of waste management is still minimal. (2) Public knowledge about waste management with the 3R system is still low. (3) There is no training or assistance in making trash bins from the government regarding waste management.

In truth, garbage may be quite valuable if correctly processed (Budiarti et al., 2018), such as compost from organic waste (Noviana & Sukwika, 2020; Sekarsari et al., 2020), plastic waste turned into crafts like ecobricks (Apriyani et al., 2020; Nurazizah et al., 2021), pillows (Didiharyono et al, 2018), household craft (Paeno et al., 2020) and even hydroponic gardening from plastic bottle waste (Damayanti & Supriyatin, 2020).

In general, this community service aims to empower the community, especially in the village of Bulota, Talaga Jaya Subdistrict, Gorontalo District in managing waste. The specific purpose of community service is to improve community competence through guided training and assistance to manage waste with the Reduce, Reuse, and Recycle system.

The waste processing program in Bulota Village, Talaga Jaya District is very necessary given the limited infrastructure and facilities for processing waste in the surrounding area, which is unable to accommodate existing waste processing. This service activity focuses on waste management training using a waste management model based on the 3R system, which stands for Reuse, Reduce, and Recycle. In Bulota village, 3R is jointly governed by PKK members. This is based on identification with partner problems; including awareness of villagers regarding the benefits of waste management is still low. Besides, public knowledge about waste management with the 3R system is still low. In addition, there is no training or assistance in making trash bins from the government regarding waste management.

Most of the heads of families and residents of surrounding villages in Bulota Village have not been able to separate waste (organic and inorganic) due to limited public knowledge and level of understanding of waste accumulation, and immediately dispose of waste anywhere.

METHOD RESEARCH

Training and mentoring activities for waste management in the Fostered Villages of Bulota Village To program effectiveness, efficiency, and quality control, this mentoring program is generally divided into 3 stages, namely (1) preparation, (2) implementation, and (3) Monitoring and evaluation.

The methods and materials for the activities are as follows:

1. Preparation

In the preparation stage, the activities carried out include:

a. Preparation for academic activities: preparation of participants, instructors, mentors, learning tools and assessment tools, learning tools and resources, study materials, guides
b. Preparation of waste management facilities and infrastructure and supporting facilities/infrastructure for training/assistance

2. Implementation

At the implementation stage, it is carried out through 3 steps, namely: (i) training (briefing). (ii) Implementation, and (iii) monitoring and evaluation.

a. Training

The training activity is a debriefing for the community participating in the activity. There is also extra content on character education, self-concept, motivation, independence, and environmental care in addition to the primary material on the 3R system waste management and domestic waste creation. The strategies carried out in the training include: (1) building active participation of participants through learning contracts, (2) building participant initiatives, (3) creating a critical learning atmosphere, (4) participants being free to think and improvise, (5) facilitators instilling a sense of responsibilities, and (6) providing opportunities for participants to progress sustainably.

This activity aims to provide knowledge and theoretical understanding of the need for environmental awareness and waste management. This activity was carried out using the method of material presentation followed by a question and answer session. Some of the questions that arose during the question and answer session included what tools and materials must be prepared; how to maintain infrastructure and waste processing facilities.

This training activity was attended by 20 people from the Ibu Dasa Wisma group in Bulota Village and 3 people from the Lecturer Service Team and 2 Presenters Team. Explain waste management (Ministry of Public Works, 2011). This type of waste is also known as wet waste. 2). Inorganic Waste Inorganic waste: waste consisting of materials that are difficult to biodegrade. The crushing process requires further handling in special places, such as plastics, cans, and styrofoam. This type of waste is also known as dry waste. 3) The women and homestead's gathering forum, which was attended by PKK women, was used to dispose of hazardous material waste. The materials provided include types of waste, the impact of waste, and awareness to minimize waste by using environmentally friendly products. Inorganic waste is usually in the form of paper, plastic

bottles, cans, and others. How may organic waste be recycled? Organic waste is frequently recycled, even if it is still done simply or traditionally. The scavenging of waste from domestic rubbish, which is then transformed into compost, is one example. Recycling has a lot of potential for lowering landfill and processing expenses.

RESULT AND DISCUSSION

Training

The training activity is a debriefing for the community participating in the activity, in addition to the main material on 3R system waste management and household waste creation, there are also additional materials such as character education, self-concept, motivation, independence, and environmental care. The strategies carried out in the training include: (a) building active participation of participants through learning contracts, (b) building participant initiatives, (c) creating a critical learning atmosphere, (d) participants being free to think and improvise, (e) facilitators instilling a sense of responsibilities, and (f) providing opportunities for participants to progress sustainably.

This activity aims to provide knowledge and theoretical understanding of the need for environmental awareness and waste management. This activity was carried out using the method of material presentation followed by a question and answer session. Some of the questions that arose during the question and answer session included what tools and materials must be prepared; how to maintain infrastructure and waste processing facilities. This training activity was attended by 20 people from the Ibu Dasa Wisma group in Bulota Village and 3 people from the Lecturer Service Team and 2 Presenters Team. Explain waste management. This type of waste is also known as wet waste. 2) Inorganic Waste, waste consisting of materials that is difficult to biodegrade. The crushing process requires further handling in special places, such as plastics, cans, and Styrofoam. This type of waste is also known as dry waste. 3) Hazardous material waste through the women's and homestead meeting forum which was attended by PKK women. The materials provided include types of waste, the impact of waste, and awareness to minimize waste by using environmentally friendly products. Inorganic waste is usually in the form of paper, plastic bottles, cans, and others. They will also learn how to recycle organic waste. Although still simply or traditionally, recycling of organic waste is also often done. An example is the scavenging of waste that comes from household waste, which is then turned into compost. Recycling has great potential to reduce additional processing and landfill costs (Subekti, 2009).

Based on how it is used, organic waste can be used directly or through recycling first. Without going through recycling, organic waste can be used directly, for example, household waste in the form of vegetables, used leaves can be used as animal feed. Through recycling, organic waste can also be utilized. Examples are making compost, making biogas, and making recycled paper. The following is a brief description of the three processes. Manufacture of Compost Fertilizer (Composting), Compost fertilizer is made from organic waste with the principle of decomposition of organic materials into inorganic materials by microorganisms through fermentation (Alex, 2015).

Training activities for waste management materials with 3 R's can be seen in the image below.

Figure 1. Training Activities on the theory of Waste Management with 3R

The following is a picture of activities for materials to reduce waste by utilizing used goods such as bottles, newspapers, and other plastic waste with materials created by household waste.

Figure 2. Training Activities on Household Waste Creation

Figure 3. The Examples of Household Waste Creations

Implementation

Implementation of activities carried out after training during the month of August. In the implementation activities, the participants were allowed to practice the results of the training for 1 month in the field. They were asked to carry out the 3R waste management system as they received in the training. The implementation of the management is accompanied and monitored by the Service Team. Mentoring/monitoring is done twice every two weeks. Visits are made to monitor, guide, and assist the implementation. Participants are expected to be able to convey what obstacles they experience in implementing the results of the training. The results of the delivery of the participants are used as the basis for the implementation of mentoring and mentoring. Furthermore, the second visit was carried out to evaluate the results of the implementation as well as to finalize the results of the mentoring.

Monitoring and evaluation

Monitoring was carried out from September to October 2020. During this second visit, an evaluation of the service program was also carried out. Therefore, interviews were also conducted with related parties, namely the Village Government, community leaders, and other related parties deemed necessary. Even so, suggestions and guidance are still given.

Evaluation of the results of the training is carried out through the assessment of (i) understanding of the training material, (ii) skills in implementing the results of the training, and (iii) attitudes during both training and attitudes towards service programs.

Monitoring is carried out For the monitoring and evaluation stage, the activities carried out are monitoring and evaluating all service programs. Monitoring is carried out on the preparation, implementation of training, and assistance. Furthermore, the evaluation is carried out starting from the results of the training, the results of the assistance, to the evaluation of the implementation of the entire service program.

The results of the discussion activity showed that the Bulota Village government was very enthusiastic and appreciated the training and assistance in waste management using the 3R system. This can be seen from the results of the initial meeting as well as in the opening of the training conducted to the Village Head together with the Dean of the Faculty of Education, State University of Gorontalo. He stated that the village government strongly supports this activity to solve the problems of environmental awareness and waste management that have been faced by the community. According to the Head of Bulota Village, so far the people in Bulota Village have never been given training and assistance regarding environmental awareness and waste management (organic and inorganic). Most of the people in the village of Bulota understand the need for environmental hygiene and health. Therefore, this activity is very helpful and supports the village government to increase environmental awareness. After carrying out the initial survey and licensing activities with the village government, then an initial meeting was held with the women of the dasa wisma or the women of the PKK with the target community groups.

The results of the initial evaluation showed that the number of participants who attended was 20 people. As many as 15 people or 75% of the group of women do not know what is environmental awareness and processing of organic and inorganic waste. As many as 75% did not yet know what the purpose of the waste sorting was. As many as 15 people or 75% of

the target community do not understand the importance of waste management to be of the sale value and a healthy environment.

CONCLUSION

Garbage is one of the problems in Bulota village, Kec. Talaga Jaya, Kab. Gorontalo. In the context of community empowerment, waste management with the 3R system (Reuse, Reduce, and Recycle) is an alternative that can be done. Community empowerment program through waste management with the 3R system, its activities begin with debriefing which then practice activities carried out by coaching and mentoring. The results of the initial evaluation showed that the number of participants who attended was 20 people. As many as 15 people or 75% of the group of women do not know what is environmental awareness and processing of organic and inorganic waste. As many as 75% did not yet know what the purpose of the waste sorting was. As many as 15 people or 75% of the target community do not understand the importance of waste management to be of the sale value and a healthy environment.

REFERENCES

Alex, S. (2015). *Sukses mengolah sampah organik : Menjadi pupuk organik* (1st ed.; Ari, Ed.). Yogyakarta: Pustaka Baru Press.

Apriyani, Apriyani, Putri, Mahadewi Mustika, & Wibowo, Samuel Yudha. (2020). Pemanfaatan sampah plastik menjadi ecobrick. *Masyarakat Berdaya Dan Inovasi*, *1*(1), 48–50.

Basriyanta. (2007). *Memanen sampah*. Yogyakarta: Kanisius.

Budiarti, Wiwik, Susilowati, Sri, & Farida, Ilya. (2018). Upaya Pemanfaatan Sampah Plastik Kelompok Ibu-Ibu Dasawisama Gladiol 161 di Perumahan Magersari Permai, Kabupaten Sidoarjo. *Jurnal Komunikasi Profesional*, *2*(2).

Damayanti, Fitri, & Supriyatin, Titin. (2020). Bercocok tanam dengan sistem hidroponik berbasis ramah lingkungan melalui pemanfaatan sampah botol plastik. *Jurnal Pelayanan Dan Pengabdian Masyarakat (PAMAS)*, *4*(1), 9–19.

Didiharyono, D., Tenrigau, Andi Mattingaragau, & Marsal, Marsal. (2018). Pemanfaatan Sampah Plastik Untuk Dijadikan Bantal Yang Berkualitas Dan Bernilai Ekonomis Di Desa Tolada Kecematan Malangke Kabupaten Luwu Utara. *To Maega: Jurnal Pengabdian Masyarakat*, *1*(1), 8–13.

Fatia, Dara, & Sugandi, Yogi Suprayogi. (2019). Gerakan Tanpa Sedotan: Hindari Kerusakan Lingkungan. *Jurnal Pemikiran Dan Penelitian Sosiologi*, *3*(2), 66–75.

Ministry of Public Works. (2011). *Waste Management Planning*. Bekasi.

Noviana, Linda, & Sukwika, Tatan. (2020). Pemanfaatan sampah organik sebagai pupuk kompos ramah lingkungan di kelurahan Bhaktijaya Depok. *Jurnal Pengabdian UntukMu NegeRI*, *4*(2), 237–241.

Nurazizah, Eliza, Mauludin, Ibnu Iqbal, Afifah, Indah Rizli, & Aziz, Rohmanur. (2021).

Pemberdayaan Masyarakat Guna Pemanfaatan Sampah Plastik Menjadi Ecobrick Di Dusun Kaliwon Desa Kertayasa. *Proceedings Uin Sunan Gunung Djati Bandung*, *1*(16), 138–151.

Paeno, Paeno, Kasmad, Kasmad, Sunarsi, Denok, Maddinsyah, Ali, & Supiyan, Dede. (2020). Pemanfaatan Sampah Plastik Untuk Kerajinan Rumah Tangga Taman Belajar Kreatif Mekar Sari. *BAKTIMAS: Jurnal Pengabdian Pada Masyarakat*, *2*(1), 57–61.

Sekarsari, Retno Wulan, Halifah, Nurifatul, Rahman, Trisnawati Hasdiah, Farida, Anis Jauharotul, Kandi, Makdum Ibrahim Asmara, Nurfadilla, Estining Apsari, Anwar, Mohammad Miftahul, Almu, Fakhri Fansuri, Arroji, Surya Ariansyah, & Arifaldi, Dana Fauzana. (2020). Pemanfaatan Sampah Organik Untuk Pengolahan Kompos. *Jurnal Pembelajaran Pemberdayaan Masyarakat (JP2M)*, *1*(3), 200–206.

Shi, Peijun, Shuai, Jiabing, Chen, Wenfang, & Lu, Lili. (2010). Study on large-scale disaster risk assessment and risk transfer models. *International Journal of Disaster Risk Science*, *1*(2), 1–8.

Subekti, Sri. (2009). *PENGELOLAAN SAMPAH RUMAH TANGGA 3R BERBASIS MASYARAKAT*. Semarang: Faculty of Engineering UNPAD.

Wildawati, Despa, & Hasnita, EJJHC. (2019). Faktor yang berhubungan dengan pengelolaan sampah rumah tangga berbasis masyarakat di kawasan bank sampah hanasty. *Jurnal Human Care*, *4*(3), 149–158.