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Organic and Inorganic Waste Management in an Efforts to Empower Santri at the Burhanul Hidayah Islamic Boarding School, Sidoarjo

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A B S T R A C T

The main problem faced by Burhanul Hidayah Islamic Boarding School is that awareness of the existence and impacts of poor waste management remains low due to a lack of knowledge and understanding about waste and how to manage it. The boarding school, which has more than 380 students, has the potential to implement independent and sustainable waste management. Community service activities at Burhanul Hidayah Islamic Boarding School include training on waste management to increase students' awareness. This training covers sorting and classifying waste into organic and non-organic types. After sorting, students receive training on processing organic waste into fertilizer that can be used to enrich the soil within the boarding school environment. Non-organic waste, such as coffee wrappers, detergent packaging, and similar items, is processed into creative products that are valuable, economical, and usable in daily activities. Based on the results of the waste education and processing activities, it can be concluded that there has been an increase in students' awareness and knowledge of waste management. Students are now capable of transforming both organic and non-organic waste into products with added value.

INTRODUCTION

Islamic Boarding School is a dormitory where students or pupils study the Qur'an (KBBI, 2018). Islamic boarding schools are run by ustadz/kyai who teach and guide students in religious field. A boarding school can accommodate hundreds or even thousands of students who live and study religious knowledge. Islamic boarding schools are expected to be able to produce students who are experts in the field of religion and also continue religious preaching in Indonesia.

One of the Islamic boarding schools in Sidoarjo Regency is the Burhanul Hidayah Islamic Boarding School. Burhanul Hidayah Islamic boarding school was founded by Father KH. Sunhaji AS, S.Pd, M.Pd (deceased) who continued by his son. Burhanul Hidayah Islamic boarding school has approximately 380 students male and female students from various regions in Indonesia. The majority of students at the Burhanul Hidayah Islamic Boarding School are of junior high and high school age.

An Islamic boarding school that accommodates hundreds of students certainly has many problems. especially the issue of cleanliness. The cleanliness of the cottage environment greatly supports comfort students in studying religious knowledge. One of the cleanliness problems that still often occurs is a waste problem. Islamic boarding schools that have many students certainly also produce a lot of waste.

Therefore, good waste management is needed so that cleanliness in the boarding school environment can be maintained properly.

The Ministry of Environment in 2012 noted that the average Indonesian population produces around 2 kg of waste per person per day (Anggraeni, 2016). The number of students, which is 380 people, has a potential waste of 600 kg per day with a percentage of 75% as much as 450 kg of inorganic waste and 25% organic waste of 150 kg. Inorganic waste in the form of plastic, paper, and styrofoam. Wet waste in the form of leaves, vegetable scraps, and food that easily decomposed by battery decomposers.

The main problem faced by Burhanul Hidayah Islamic Boarding School is awareness about the existence and impacts caused by poor waste management are still low due to the lack of knowledge and insight about waste and how to manage it. Waste that is not managed properly not only causes negative impact on the natural environment, but also on the quality of human health (Miller, 2004). The current waste management at the Burhanul Hidayah Islamic Boarding School has not yet reached the stage of thinking about waste management, especially by recycling the waste, especially plastic waste. The waste management method at this Islamic boarding school is still using conventional methods, namely by burying or burning the waste.

The problem of waste is a problem that cannot be ignored because it will continue to increase. the number is in line with the increasing activities of the students and the increasing number of students so that serious and further handling is needed. On the other hand, the carrying capacity of nature as a place that is usually used to dispose of garbage is decreasing both in terms of land area and in terms of quality and soil fertility. For this reason, proper waste management is required. Which meets the requirements including not polluting the air, water and soil, not causing odors, not causing fires due to burning rubbish and other activities and so on. Waste management at the Islamic Boarding School is one of the alternative activities. from various community-based waste management activities.

The potential of Islamic boarding schools with more than 380 students allows for independent and sustainable waste management. Independent waste management is the management of waste management carried out by the community, both individually and in groups, at the source level. Sustainable waste management behavior is defined as efforts to reduce waste (reduce), reuse items that are still suitable for use (reuse), recycle waste (recycle), and convert waste into energy sources (waste to energy) (Gusti et al., 2015). From the description above, waste management at the Burhanul Hidayah Islamic boarding school in Bugel Village needs to be carried out considering that waste management at this Islamic boarding school still uses conventional methods and it is necessary to introduce the benefits of recycling waste. Good waste management can improve the quality of the Islamic boarding school environment. Recycling both organic and non-organic waste can increase the skills of students and provide economic contribution to Islamic boarding schools.

Community service activities that will be carried out at the Burhanul Hidayah Islamic Boarding School include training in waste management to increase students' awareness in sorting and selecting waste according to the type of organic and non-organic. After sorting, there will be training on processing organic waste into organic fertilizer that can be used to fertilize plants in the Islamic boarding school environment. Non-organic waste in the form of coffee packaging, detergent and similar things are also processed into products that can be reused in daily activities.

METHOD

The implementation method in this service is lecture, discussion and practice. Participants in the activity amounted to 20 students who are representatives from each room group at the Burhanul Hidayah Islamic boarding school. The first stage, the participants participated in lecture and discussion activities about waste and then practiced grouping waste based on its type. Second stage, after the waste is grouped, the participants are trained to make compost using simple composter from used drums. The third stage after the plastic waste has been collected, training is held on processing plastic waste into inorganic materials.

RESULT AND DISCUSSION

Waste management service is divided into three stages of activity as follows:

a. Waste Counseling Stage

The first stage in the community service activity for the implementation of independent waste management is by holding counseling about waste. Participants in this activity are the administrators Burhanul Hidayah Islamic boarding school which is expected to become a pioneer in the management of waste. The extension material covers issues about waste, types of waste, and how to manage it. garbage. After this counseling, it is expected that the students will gain knowledge about garbage. After the delivery of the material, the students are assigned to sort and group the garbage based on the types are organic and inorganic.

b. Organic Waste Processing Training

In previous activities, the students were provided with material about types of waste and how to management. In the next stage, the community service team conducted waste management training for organic waste types. Organic waste will be processed into organic fertilizer (compost) using a composter. The composter used is a household-scale composter made from used drums. After this training, it is hoped that the students who work as cleaners can sort and collect tree leaf waste which can then be processed into compost. The compost can later be used as fertilizer for plants in the Islamic boarding school.

The steps for making compost are as follows:

- 1) Organic waste in the form of leaves is chopped 1-2 cm.
- 2) The chopped leaves are put into the composter.
- 3) Dissolve the EM4 liquid in a ratio of 1:50.
- 4) Put the EM4 liquid solution into the composter that has been filled with leaves until all the leaves are filled wet while stirring.
- 5) Every 2 days the leaves in the composter must be stirred so that compost can form. evenly and optimally.
- 6) After 3 weeks the leaves in the composter have become compost and are ready to be used as fertilizer.

c. Inorganic Waste Processing Training

After the students are able to sort the waste and make organic fertilizer, then the next step is to hold inorganic waste training. The inorganic waste that will be used is plastic bags, coffee wrappers, detergent wrappers and the like. The plastic waste will be processed into crafts that have economic value. The process of processing plastic waste and

The products produced are as follows:

1) Plastic bag waste

Plastic bag waste is ironed to make it stiff, then cut into a flower pattern. desired. The flower patterns are arranged on prepared plastic flower stems.

2) Plastic waste from perfume packaging

The perfume wrapper is cut according to the pattern. The cut results are arranged in a circle and sewn using thread, then attach the brooch pin and beads.

3) Waste from sachet beverage packaging

The ends of the sachet drink wrapper are cut lengthwise. The cut results are woven to form a fish pattern. Insert the plastic waste pieces into the weave then glue and attach the key chain iron

CONCLUSION

The waste counseling and processing activities at Burhanul Hidayah Islamic Boarding School effectively increased students' knowledge and awareness of proper waste management using the 3R approach (reduce, reuse, recycle). Students successfully transformed organic waste, particularly leaves, into compost using simple bucket composters, and converted plastic waste into economically valuable crafts. To ensure the sustainability of these activities, it is recommended to improve waste management infrastructure and

facilities and to involve caretakers and school administrators in enforcing regulations that encourage students to consistently manage their waste.

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