

## Socialization and Mentoring in Ecobricking as an Alternative to Plastic Waste Management in Tajungan Village

Achmad Faisol<sup>\*1</sup>, Muhammad Fatkhul Zahroni<sup>2</sup>, Nova Rosdeawati<sup>3</sup>, Agung Setyawan<sup>4</sup>

<sup>1,2</sup> Management Study Program, Faculty of Economics, Trunojoyo University, Madura, Bangkalan, Indonesia

<sup>3</sup> Marine Studies Program, Faculty of Agriculture, Trunojoyo University, Madura, Bangkalan, Indonesia

<sup>4</sup> Elementary School Teacher Education, Faculty of education, Universitas Trunojoyo Madura, Bangkalan, Indonesia

correspondence e-mail: [its.achmadfaisol@gmail.com](mailto:its.achmadfaisol@gmail.com)

### ARTICLE INFO

#### Article History:

Received Nov 21, 2019

Revised Jan 27, 2020

Accepted Feb 13, 2020

#### Keywords:

Keywords 1, Plastic Waste

Keywords 2, Ecobricks

Keywords 3, Socialization

Keywords 4, Mentoring

### ABSTRACT

Every activity carried out by humans will produce waste, both agricultural activities, industry, domestic activities, and other activities. Based on its nature, waste is divided into 2 types, namely, organic (easily decomposed) and inorganic (difficult to decompose). One example of inorganic waste is plastic, plastic is still widely used in the daily life of the Indonesian people, so it affects the amount of plastic waste produced every day. However, this has not been balanced with public awareness and understanding regarding the impacts produced by plastic waste and alternatives to proper plastic waste management. This has led to a higher amount of plastic waste, especially from the household sector. Therefore, there is a need for socialization and mentoring activity in managing plastic waste, one of the alternatives to plastic waste management that can be used is ecobricks. The implementation methods used in this activity are socialization of the impact of plastic waste and ecobricking methods, ecobricking practices and assistance, and evaluation. This activity is located in Tajungan Village, Kamal, Bangkalan. This socialization and mentoring activity aims to improve the knowledge and skills of the community in managing plastic waste independently so that the production of plastic waste especially from the household sector can be reduced.



© 2022 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution ShareAlike (CC BY SA) license (<https://creativecommons.org/licenses/by-sa/4.0/>).

### A. Introduction

Garbage is an item or object that is thrown away because it is not used or is no longer used. Based on Government Regulation of the Republic of Indonesia Number 27 of 2020 Article 1 Paragraph 1 concerning Specific Waste Management, waste is the remains of human daily activities and/or natural processes in solid form. Every activity carried out by humans will produce waste, both agricultural,

industrial, domestic (household) activities, and other activities (Fauzi et al., 2020). Based on its nature, waste is divided into 2 types, namely, organic (easy to decompose) and inorganic (difficult to decompose). One example of inorganic waste is plastic. Plastic is still widely used in the daily life of Indonesian people, so it affects the amount of plastic waste produced every day. Its non-biodegradable nature (cannot be decomposed by biological processes) is one of the causes of environmental damage. In addition to disturbing aesthetics, plastic waste is also at risk of transferring toxic compounds and disrupting the life of existing ecosystems (Septiani et al., 2019). The government has tried to encourage people to switch to green behavior through the implementation of the "paid plastic bag" policy when consumers shop. However, apart from only being applied to modern outlets, this policy has not been able to convince the public to completely switch from using plastic bags (Novianti & Kartika, 2017).

The lack of public awareness regarding plastic waste and understanding of the impact it produces and how to manage plastic waste are also factors that make the amount of plastic waste continue to soar. The community in general follows up on the problem of waste in a simple way, namely by burning it. This method of burning is carried out by the community because it is relatively easy. In addition, by burning waste, the volume of waste will decrease significantly up to 90% (Patil et al., 2014). However, burning plastic waste has a negative impact on health such as causing respiratory problems, nervous system disorders, causing cancer, and increasing the risk of heart attacks. This is because burning waste will release toxic gases including dioxins, furans, mercury, and Polychlorinated Biphenyl (Verma et al., 2016). Plastic waste management by burning is not allowed as stated in Article 29 of Law Number 18 of 2018 concerning Waste Management.

One of the simple plastic waste management methods that can be done by the community to reduce the production of plastic waste, one of which is the ecobrick method. The ecobrick method first appeared in Guatemala and is now widely practiced by residents of other countries such as South Africa who recycle plastic waste into building materials (Hopkins, 2014). The ecobrick method is a method of managing plastic waste by packing clean and dry plastic in PET (Polyethylene Terephthalate) bottles with a certain density (Fauzi et al., 2020). Currently, ecobricks are not only used as an alternative to bricks, but also made into other useful products such as chairs, tables, and others. The process of making ecobricks is quite simple and inexpensive in terms of cost, but this method can be said to be an effective way to reduce the amount of plastic waste that can pollute the environment.

Based on the problems described above, it is necessary to carry out socialization activities and assistance in making ecobricks to the community in order to increase public awareness and ability regarding the management of plastic waste independently. The target of this activity is a group of housewives in Tajungan Village, Kamal District, Bangkalan Regency. Therefore, this community service activity is the right and potential means in implementing these activities.

## **B. Method**

Community service activities were carried out in Tajungan Village, Kamal District, Bangkalan Regency from May 6, 2022 to July 2, 2022. The target of this socialization and assistance activity for making ecobricks was a group of housewives in Tajungan Village, Kamal District, Bangkalan Regency. The tools and materials used in this activity include questionnaires, materials (printed), plastic bottles or PET (Polyethylene Terephthalate) bottles, plastic waste, scissors, wood, glue gun, plaster, paint, and wire (optional).

Data collection was carried out by the community service team using observation, interviews, and literature studies. The interview method was carried out to collect relevant information from the community needed by the community service team. Field observations were carried out before the activity started, aiming to find out the real and current conditions of the community and the target location and at the time after the activity was carried out to see changes in the community after participating in the activity. Literature studies are carried out to find the best way or solution that can be applied by the community regarding the problems that occur.

The implementation method of this activity is adjusted to the existing problems, the stages in the implementation method used in this activity consist of the preparation, implementation, and evaluation stages. At the preparation stage, it is used to obtain information related to existing problems from the community, find the best way or solution to be applied to the community, as well as to collect tools and materials that will be needed at the implementation stage. The implementation stage is further divided into 2 stages, namely (1) material presentation and discussion; (2) Practice and training in making ecobricks. Then, the evaluation stage is the process of evaluating activities from the preparation stage until the activity is completed.

### **C. Result and Discussion**

This community service activity in the form of socialization and assistance in making ecobricks was attended by 13 housewives in Tajungan Village, Kamal District, Bangkalan Regency. It is hoped that the selection of the housewives group as the target of this activity is not only to be applied independently but also to be able to disseminate the information obtained to other housewives, so that it can reduce the amount of plastic waste production from the household sector. In addition, this activity also aims to increase creativity and innovation of the community, especially housewives, so that they can make useful products from plastic waste.

This activity begins with filling out questionnaires by housewives before participating in socialization activities and mentoring in making ecobricks. This questionnaire will later be used to see the usefulness of the activity and the achievement of the activity's objectives, namely by comparing the results of the questionnaire before and after the activity is carried out. The questionnaire that was distributed contained questions related to plastic waste and the ecobrick method as an alternative to plastic waste management:



**Picture 1.** Filling out questionnaires by housewives

After filling out the questionnaire, this activity was continued with the delivery of materials or information related to plastic waste and the ecobrick method to housewives. This activity was well attended by the audience which was shown by the enthusiasm of the housewives in paying attention to the process of delivering information. In addition, the housewives were also active during the discussion and question and answer process, indicated by the number of questions posed to the communicators or presenters.



**Picture 2.** Implementation of socialization and delivery of materials

After the information related to plastic waste and the ecobrick method has been conveyed, then the activity is continued with the practice of making ecobricks. This activity begins by preparing used plastic bottles or PET (Polyethylene Terephthalate) bottles, then starting to be filled with plastic waste gradually until the bottles are full and produce a dense and strong texture. In this activity, the community saw firsthand the process of making ecobricks from start to finish carried out by communicators or presenters. It is hoped that later it can be applied independently at home by participants, namely housewives, accompanied by a community service team.



**Picture 3.** Ecobrick making practice

Assistance in making ecobricks by the community service team will be carried out in the early stages of the process of making ecobricks by housewives by visiting several homes of participants in the socialization activity. Assistance will consist of filling the bottle completely and producing a dense texture. Where for the process of filling 1 bottle of 1,500 ml, it takes approximately 30-45 minutes.

#### **D. Conclusion**

This community service activity aims to increase public awareness, especially housewives, regarding the impacts that will be caused by plastic waste and provide an understanding of plastic waste management methods. This activity has been carried out well as shown by the enthusiasm and level of activity of the participants in listening to the presentation of information and discussing with each other. It is hoped that after this activity takes place, the participants, namely the housewives group, can practice the knowledge and skills they have acquired and disseminate it to other housewives, so that the production of plastic waste, especially from the household sector, can be reduced.

## References

- Fauzi, M., Sumiarsih, E., Adriman, Rusliadi, & Hasibuan, I. F. (2020). Pemberdayaan masyarakat melalui pelatihan pembuatan ecobrick sebagai upaya mengurangi sampah plastik di Kecamatan Bunga Raya. *Riau Journal of Empowerment*, 3(2), 87–96.
- Hopkins, R. (2014). *EcoBricks and Education: How Plastic Bottle Rubbish is Helping Build Schools*. The Guardian News Website of the Year.
- Novianti, A. I., & Kartika, L. (2017). Pengaruh Green Marketing Kebijakan Kaantong Plastik Berbayar terhadap Green Behaviour Masyarakat Kota Bogor. *Jurnal Riset Manajemen Dan Bisnis*, 2(1), 81–94.
- Patil, A. A., Kulkarni, A. A., & Patil, B. B. (2014). Waste to Energy by Incineration. *Journal of Computing Technologies*, 3(6), 12–15.
- Septiani, B. A., Ariane, D. M., Risman, V. F. A. A., Handayani, W., & Kawuryan, I. S. S. (2019). Pengelolaan Sampah Plastik di Salatiga: Praktik dan Tantangan. *Jurnal Ilmu Lingkungan*, 17(1), 90–99.
- Verma, R., Vinoda, K. S., Papireddy, M., & Gowda, A. N. . (2016). Toxic Pollutants from Plastic Waste-A Review. *Procedia Environmental Sciences*, 35, 701–708.