

COMMUNITY EMPOWERMENT THROUGH TRAINING ON PROCESSING PLASTIC WASTE INTO 3 DIMENSIONAL CRAFTS IN PEGUNDAN VILLAGE

Athiya Aisyina Mahmudah ^{1*}, Muhamad Faiz Asnafi ¹, Mir Atun Nisa ², Azwar Ilham Pamungkas ², Ngizatul Laeli ²

¹ UIN Sunan Kalijaga Yogyakarta, Indonesia

² UIN Prof. K.H. Saifuddin Zuhri Purwokerto, Indonesia

* 20108040018@student.uin-suka.ac.id

Abstract - *The waste problem is a problem that is always faced by the community, especially in Pegundan Village, Petarukan District, Pemalang Regency. This is because the quantity and level of danger of waste, especially plastic waste which is composed of chemicals that are difficult to decompose so that it is harmful to the environment. For this reason, it is necessary to process waste to turn plastic waste into crafts that have use value and are economical. This plastic waste processing training uses the ABCD approach, which is a method that prioritizes the utilization of assets and potentials that are around and owned by the community. With community empowerment in the form of processing plastic waste into 3-dimensional crafts, it can reduce the quantity of waste and increase creativity for community welfare. After counseling, the community already has knowledge about waste management in general and skills in processing inorganic waste in the form of plastic into 3-dimensional handicraft products in the form of ashtrays that are suitable for use and suitable for sale.*

Keywords: *Empowerment, Plastic Waste, 3D Crafts*

1. INTRODUCTION

Waste is a material that is wasted from sources of human activities and natural processes that do not yet have economic value. Garbage is an item or object that is thrown away because it is no longer used. Waste based on its nature has two types, namely organic waste and inorganic waste. Organic waste is waste derived from living things such as the remains of food, vegetables, and fruits that are easily decomposed by microorganisms (Mawarni et al., 2022). Meanwhile, inorganic waste is waste that comes from human activities that are difficult to decompose by microorganime and require a very long time in the decomposition process such as plastic, packaging bottles, zinc and so on (Ambar Tri Ratnaningsih et al., 2021). Most organic waste can be processed into compost and biogas, while inorganic waste can be processed into handicraft products and paving blocks.

Various types of waste actually have useful values that people still do not realize. One of the many wastes that can be recycled is plastic waste. Plastic is a synthetic material made from processing organic products, such as hydrocarbon compounds (Rahmi & Selvi, 2021). The use of plastic has become inherent in human life because of its practical, lightweight, durable, and affordable price. The potential use of plastic is not only when we use it, but after we use it as well. One of the efforts to reduce the adverse effects of plastic waste on the environment is to implement the 3R principle (Haerana et al., 2022). The government has committed to reducing waste with the 3R (*Reduce, Reuse, Recycle*) program by 30% until 2025, and specifically for plastic waste, the government has set a reduction target of up to 70% by 2025. With the 3R principle, waste that does not have economic value and is not environmentally friendly can be processed into useful, economically valuable and environmentally friendly goods.

Waste is one of the never-ending problems because waste will continue to be produced as long as humans exist. People still underestimate the problem of waste, and its existence will always cause problems for people. This happens because the community has not implemented waste management methods properly. Creativity is very important for every individual to be able to compete in today's digital era. One of the creativity needed is training in processing plastic waste into creative products with economic value (Rustiarini et al., 2021). Pegundan Village, which is one of the villages in Pematang Regency, is one of the villages that produces a lot of waste due to the malfunction of the landfill. The large number of people in Pegundan Village, which is around 13,000 people, results in a lot of waste produced everyday. Therefore, creativity is needed in utilizing waste that is of economic value.

A small number of people in Pegundan village have processed plastic waste into ecobrick handicrafts which are used into bags, tissue holders, glass holders, mats, and so on that have use value and are economical. KKN students collaborated between UIN Sunan Kalijaga Yogyakarta and UIN Prof. K.H. Saifuddin Zuhri Purwokerto conducted socialization and counseling related to processing plastic waste into 3-dimensional handicraft products in the form of making ashtrays that can have economic value. The purpose of this activity is to provide socialization and education on the use of plastic

waste to the community and provide skills to produce handicraft products with economic value. With the care, awareness and skills possessed by the community, plastic waste can be processed into useful products to reduce the amount of plastic waste and the handicrafts of plastic waste can be marketed so as to improve the family economy.

2. METHOD

The empowerment program carried out in this service uses the ABCD approach, which is a method that prioritizes the utilization of assets and potentials that are around and owned by the community (Yuwana, 2022). This method is more about developing assets and potential, not solving problems (Fajarwati & Yunita, 2022). In this research, the service focused on developing village assets, namely the plastic waste processing program which is the main problem in Pegundan Village. Together with PKK cadres of the plastic waste processing program which was previously only collected and burned, this empowerment will be used to use some of the plastic waste into more useful and economically valuable items. The management carried out is to turn plastic waste into 3-dimensional crafts which in this case are ashtrays. The economic value of plastic waste processing is ashtrays that can be sold to the community. Therefore, based on these initial observations, researchers are interested in plastic waste management programs into items that are more useful and have economic value. The steps that can be done with the ABCD method, among others (Habib, 2021):

1. Discovery

The discovery stage is the process of revealing information and the process of finding things of positive value. In this case, a very important element is the action of community development based on planning assets. This process is usually done with interviews to get a lot of information. In this research, the community service conducted a Focus Group Discussion (FGD) with the head of Pegundan Village and community representatives to explore the potential and information in Pegundan Village.

2. Dream

At this stage everyone can see the future that will be achieved or dreamed of based on the results of the previous stage, namely discovery. Everyone explores hopes and dreams for both individuals and groups. In this case, the service sees one of the programs initiated by a community, namely the processing of plastic waste and sees opportunities to make plastic waste into more useful and economically valuable goods. In realizing the dream of waste processing, we offer the concept of reuse and recycle to turn plastic waste into 3-dimensional crafts, namely ashtrays.

3. Design

This stage is the stage of starting to formulate strategies, processes, systems, make decisions and develop collaboration to support the realization of the expected changes. In this case, we plan to collaborate with PKK cadres to

innovate the collected plastic waste and turn it into 3-dimensional crafts that have use value and economy.

4. Destiny

This stage is the stage of implementing various things that have been planned at the design stage to achieve the expected or dreamed goals. This stage is carried out continuously, following its development, and always innovating its activities. In this case, we immediately conducted training on processing plastic waste into 3-dimensional crafts with the main target of the training being PKK cadre mothers.

3. RESULTS AND DISCUSSION



A. Program Implementation

Community service is carried out starting from the receipt of the application for community service in the intended village. Empowerment is essentially a process of creating an atmosphere that allows developing the talents or potential of the community. Economics is one of the sciences that studies how an individual or group utilizes limited resources to meet the needs of his life. Creative economy is a concept to drive the economy that focuses on developing the added value of goods through creativity and innovation. In this case, the development that can be done is on plastic waste assets where every day must be produced by the community. Plastic waste management will be more useful if it is reprocessed into more useful and economically valuable goods. Waste is an item produced from human or natural activities that economically has no value. The types of waste are divided into two, namely organic and inorganic waste. Organic waste is waste that is easily decomposed naturally by microorganisms in the soil, such as foliage waste (Putri et al., 2023). Meanwhile, inorganic waste is waste that is difficult to decompose naturally or takes a very long time to decompose, such as plastic waste (Andayani et al., 2022). The problem that is often encountered in the community is inorganic waste in the form of plastic waste. The lack of public awareness in good and correct plastic waste management causes the loss of opportunities in utilizing the waste into valuable goods. So far based on

observations, generally plastic waste is only disposed of, burned, sold, and buried. In fact, if we are able to see opportunities, goods that are considered worthless if processed will become goods that have benefits.

The implementation of this community service program uses the ABCD approach. Related to the details of the stages of this approach to the implementation of the plastic waste processing work program, namely (Fajarwati & Yunita, 2022):

1. Discovery

This stage emphasizes the extraction of assets and potential owned by an area. In this regard, the service conducted a number of interviews and FGDs with the head of the RT and community representatives. Based on the discussion, several assets and potentials owned by the people of Pegundan Village were found that can be used as community empowerment activities through plastic waste. The assets found are classified into physical, social, human, and natural assets. Physical assets owned are buildings, vehicles, office equipment etc. Then social assets, namely Karang Taruna, PKK cadre mothers, Linmas (Community Traffic), Fatayat etc. These assets become the main subject in this empowerment which can later be transmitted to other residents. Human assets, in the form of PKK cadre mothers who strongly support the implementation of this activity. With this support, it is expected to move the community to be active in waste management independently and sustainably. Last is natural assets, in the form of land used for rice fields, etc.

1. Dream

At this stage, each person or group can express their hopes and dreams for the future. Based on the results obtained earlier, the village head expressed a dream to make Pegundan Village cleaner from waste because the landfill in the center of Pematang Regency has been closed due to the large amount of waste sent to the landfill. With this dream, the devotee offers a work program, namely the management of plastic waste into 3-dimensional crafts in the form of ashtrays. It is hoped that later the management of plastic waste can be carried out by the community in a sustainable and sustainable manner.

2. Design

This stage is the stage of designing concepts and strategies to realize dreams that have been assembled. Pengabdian collaborates with community organizations, namely PKK cadre mothers in garbage collection. After that is the planning of materials needed in waste management activities. Plastic waste will be recycled into 3-dimensional crafts in the form of ashtrays. The tools and materials needed, among others :

No.	Tools and Materials	Picture	Content
1.	Stove / furnace		Used as a tool to heat plastic waste
2.	Big boiler		Used as a place to cook garbage porridge
3.	Ashtray mold		Used as a tool for printing crafts
4.	Wire mesh		Used as ashtray reinforcement
5.	Large spoon		Used as a tool for stirring garbage slurry

6. Scissors



As a tool for cutting garbage into small parts

7. Paintbrush



Used as a tool to apply cooking oil to molds

8. Sandpaper



Sandpaper is used to smooth the texture of the craft/ashtray

9. Plastic Bucket



Used to soak crafts before molding so that waste liquid/waste pulp cools faster

10. Plastic Waste



The main materials used in making 3-dimensional crafts

11. Oil



The material used to lubricate the mold makes the printing process easier

3. Destiny

The last stage is the implementation of the plan that has been designed at the design stage. Plastic waste that has been collected is then cleaned and dried in the sun until completely dry. After that, the plastic waste is cut into small pieces before being cooked into garbage pulp. Furthermore, plastic waste that has been cut into small pieces is put into a pot and cooked using high heat for 15-20 minutes until the plastic waste becomes waste pulp. Finally, put the garbage slurry into a mold that has been smeared with oil, wait about 2 minutes, put it in a bucket filled with water and ready to print. If the results are still not neat, it can be tidied up using sandpaper.

Community service empowers the community in the form of plastic waste management into 3-dimensional crafts in the form of ashtrays. The main subjects of this empowerment are the mothers of PKK cadres in Pegundan Village. This activity will be held on Saturday, August 12, 2023 at the Pegundan Village People's Hall. Before implementing the program, first coordinate with the head of the Pegundan Village PKK cadre, Mrs. Nur Baniyati. The implementation of the program is carried out through "Counseling and Training on Processing Plastic Waste into 3D Crafts".



B. Program Evaluation

The results of the implementation of further service activities are contained in the discussion of monitoring and evaluation. Monitoring and evaluation is a very important activity carried out to find out how far the effectiveness and

efficiency of the work program implemented. Broadly speaking, the assessment of the success of the work program that has been carried out depends on several components, including the target number of participation participants, the achievement of program objectives, and the benefits of the program being run. Based on the evaluation that has been carried out with the chairman and cadres of the PKK, it can be concluded that the implementation of work program activities has run well and smoothly. The hope is that these activities can later be continued by the community independently and sustainably. Based on the monitoring carried out, PKK cadre mothers have carried out practices together during counseling with KKN students. There were several PKK cadres who expressed their opinions regarding the plastic waste management work program. They stated that the plastic waste recycling work program was considered very good, but to make it did require a lot of waste so that it took a long time to collect plastic waste to be processed. Used plastic bottles and cups are considered more effective to use as basic materials because they have a stronger texture compared to ordinary plastic. The number of participants targeted for participation in the plastic waste management work program is 50 people. In its implementation, the number of active participation participants was 40 people. This is because there are permits that cannot participate in waste processing extension activities. Thus, the success rate of the target number of participation participants can be considered good, because 80% of the target community has actively participated. Then the achievement of program objectives, in order to determine the accuracy of the target program implementation target. There are several objectives of the waste management empowerment program, including reducing the volume of plastic waste, increasing awareness of the importance of waste processing and community creativity, and handicrafts have use value and are economical. Community coverage is not yet comprehensive in one village, so there is still not much level of public awareness about the importance of maintaining a clean environment with waste management. Therefore, it is hoped that PKK cadres will be able to socialize how to process plastic waste into crafts in each hamlet in Pegundan Village which consists of 4 hamlets. The final assessment is the expediency of the program. This community empowerment program through plastic waste management is very useful for the community to be able to better maintain the cleanliness of the environment by utilizing waste. Plastic waste is recycled into 3-dimensional crafts in the form of ashtrays which later the results can be useful for the surrounding community. From this, the success rate can be considered good, because of the high level of enthusiasm and community support.

4. CONCLUSION

The plastic waste management work program in community service carried out in Pegundan Village, Petarukan District, Pemalang Regency has been carried out well. Based on the description of the discussion above, it can be concluded as follows: plastic waste

management activities can reduce the volume of waste in the community, can increase public awareness of the importance of processing waste into useful and economically valuable items, 3-dimensional crafts can be an alternative business that saves expenses, and the implementation of overall activities can be said to be successful. This can be seen from the achievement of the number of participants, program objectives, and the benefits of the program that is run as a whole.

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