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Community empowerment, waste, and their challenge (a study on empowerment, participation, and economic value of waste management in Manunggal karso waste bank in Paju village of Ponorogo Regency, Indonesia)

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Abstract

Community empowerment in waste management is important to implement in the attempt of solving waste-related problems. Nowadays, waste management is directed not only to the goal of environmental value but also to exert impact on economic value. Nevertheless, public participation is often still so low that empowerment attempt should be encouraged more strongly. This research aims to describe and analyze the waste management through Waste Bank in Paju Village, Ponorogo Regency, from empowerment, participation, and economic value. This study is a descriptive qualitative research. Techniques of collecting data used in this research were interview, observation, documentation, and Focus Group Discussion (FGD). Data triangulations employed in this research were source and method triangulations. Creswell's qualitative analysis model was also used in this research. The result shows that waste management through Manunggal Karso Waste Bank in Paju Village, Ponorogo Regency is still inhibited with low community participation. Nevertheless, economic value has been seen from various recycled products produced by the members. Socialization should be reinforced in the future and programs designed should be improved and maintained for its sustainability.

Keywords: Empowerment; Waste; Participation; Waste Bank; Economic Value

1. Introduction

Waste management with community empowerment approach becomes experts' concern, both nationally and internationally. Community is encouraged to have adequate waste management capacity. Community's abilities of planning, implementing and evaluating the program become a series of important activities to realize community's autonomous waste management. It is important recalling that autonomous community can be encouraged through its engagement in various empowerment programs (Najiyati, *et al.*, 2005).

Some previous researches have studied community empowerment in waste management (Fitriyanti & Yunita, 2021; Suliza, *et al.*, 2020; Jomehpour & Behzad, 2020). Suliza, *et al.* (2020), through their research, studied the empowerment of housewives using Waste Bank. The result shows close relationship between waste management education and empowerment. Fitriyanti & Yunita (2021), through their research, analyzed community empowerment in processing waste into handicraft. The result shows that people (community members) have adequate capacity to process plastic waste into economic-valued handicraft. Jomehpour & Behzad (2020), through their research, studied waste management from community participation. The result shows that community participation is the key to the development of waste management at local level. These previous studies are really useful for the author to study waste management from the aspects of empowerment, participation and economic value of waste management. Nevertheless,

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they studied the three aspects separately. Therefore, this research focuses more on studying waste management more comprehensively from the aspects of empowerment, participation, and economic value.

Community empowerment in waste management is often inhibited by low community engagement and participation. Community's awareness of the importance of waste management is still so low that ignores their role to participate and engage in a variety of community-based waste management activities. Meanwhile, community participation is an absolute requirement that can determine the successful community empowerment attempt. Participation is a key element to empowerment (Narayan, 2002). Participation is an important aspect in empowerment, in which this participation can encourage community engagement in decision making and strong commitment to community belongingness inclusively (Wandersman, *et al.*, 2005).

Low community participation in waste management can be seen from community-based waste management in Paju Village. Paju Village is one of village in Ponorogo Sub District, Ponorogo Regency, East Java Province, Indonesia. Paju Village borders Brotonegaran Village, Ponorogo Sub District in the North, and it borders Pengkol Village, Kauman Sub District in the South. Furthermore, Paju Village borders Beton Village, Siman Sub District in the East, and it borders Sragi Village, Sukorejo Sub District in the West. Paju Village has community-based waste management facilities, one of which is Manunggal Karso Waste Bank.

Manunggal Karso Waste Bank was established aiming to encourage community's capacity and autonomy in waste management in Paju Village. Nevertheless, this actual condition indicates that community participation in joining this community-based waste management is still very low. Only 60 (sixty) persons are enlisted to be the members of Manunggal Karso Waste Bank. This quantity belongs to very small category, compared with the total number of population in Paju Village, 3,625 people. Meanwhile, Manunggal Karso Waste Bank has been established since 2013. This condition can represent the low community participation in joining the community-based waste management facility. It can endanger the sustainability of community empowerment in waste management and economic value becoming the goal of waste management. Departing from this, this research aims to describe and to analyze waste management in Paju Village, Ponorogo Regency, from the aspects of community, participation and economic value.

2. Literature Review

2.1. Empowerment

Empowerment has been defined by many experts. Payne (Masrukin, *et al.*, 2016) states that empowerment is an attempt of developing an individual's capacity aiming to grow autonomous behavior in taking act and making decision. In line with this, Mardikanto & Soebianto (2015) state that empowerment is giving the marginal community an opportunity through encouraging them to participate actively in various development programs. Furthermore, Swift & Levin (Mardikanto, 2010) state that empowerment is an attempt taken to improve marginal community's capacity to enable them to have adequate accessibility to various existing resources.

Empowerment is closely related to the actualization of potentials the community has that applies both individually (*individual self-empowerment*) and collectively (*collective self-empowerment*), (Adimihardja and Hikmat, 2001). Empowerment is a real representation of people-centered development paradigm, according to Goulet (Alfitri, 2011). Empowerment is essentially a representation of development democratization in accordance with the principle of Good Governance (Wrihatnolo and Dwidjowijoto, 2007). Empowerment is an attempt taken to encourage the improvement of human capacity through *empowering design program, empowering relationship and empowering by organization* (Barnes, 2020).

2.2. Participation

Some experts have put participation aspect to be the one inseparable from empowerment (Mardikanto, 2010; Najiyati, *et al.*, 2005; and Narayan, 2002). Participation is one of important aspects determining a successful community empowerment (Narayan, 2002). Participation is desirable to strengthen community empowerment (Mardikanto, 2010). Furthermore, this participation is the output of empowerment that can strengthen community autonomy (Najiyati, *et al.*, 2005).

Participation is closely related to community empowerment (Wrihatnolo & Dwijowidjoto, 2007; Wandersman, *et al.*, 2005; and Narayan, 2002). Participation is the key element of empowerment that encourages the people's engagement in making decision and strong commitment to community ownership inclusively (Wandersman, *et al.*, 2005).

Participation is often used to study how far the community empowerment has run from the perspective of community as the subject of development (Wrihatnolo & Dwijowidjoto, 2007).

2.3. Economic Value of Waste Management

Waste management is expected has an impact, among others, on the increase of economic value, social value, and environmental value. In relation to economic value, the experts agree to include this value into the expected impact of waste management (Hoesein, 2020; Hapsari, 2019; dan Rodic' & Wilson, 2017). Waste management is closely related to economic impact generated (Hoesein, 2020). Waste management can be seen from how far the activity can strengthen financial autonomy (Rodic' & Wilson, 2017). Furthermore, economic value of waste management can be seen from its impact on the increase of community income (Hapsari, 2019).

The experts agree to put this economic value to be an important aspect in the development of waste management value chain (Bonato, *et al.*, 2022; Gutberlet, 2021; dan Azevedo, *et al.*, 2019). Economic value becomes an impact needing attention in waste management (Azevedo, *et al.*, 2019). It is in line with the importance of developing the chain value of waste management through paying attention to economic value (Gutberlet, 2021). Economic value is an integral part of the development of waste management chain value (Bonato, *et al.*, 2022).

3. Method

This research used a descriptive qualitative research type. Meanwhile, techniques of collecting data used in this study were interview, observation, documentation and Focus Group Discussion (FGD). Furthermore, data triangulation used in this study consisted of source and method triangulations. These triangulations were used to analyze data from various sources collected and methods used (Sutopo, 2002). The author compared data obtained from various informant sources using various methods.

Creswell's (2009) qualitative analysis model was used in this study by following 6 (six) stages. Firstly, the author prepared and organized data. Secondly, the author read entire data. Thirdly, the author analyzed and encoded data. Fourthly, the author encoded and categorized data. Fifthly, the author described data/information. Sixthly, the author interpreted data and gave it meaning.

4. Result and Discussion

Paju Village is one of urban villages in Ponorogo Sub District, Ponorogo Regency. Paju Village has community-based waste management facilities, one of which is Manunggal Karso Waste Bank. Manunggal Karson Waste Bank is a community-based waste management facility established firstly in Paju Village. Manunggal Karso Waste Bank has been established since 2013. Manunggal Karso Waste Bank was established to encourage the people of Paju Village's autonomy of managing waste collectively. It is in line with Payne (Masrukin, *et al.*, 2016) stating that empowerment is aimed at encouraging community capacity and autonomy in taking act and making decision.

4.1. Empowerment Program in Manunggal Karso Waste Bank

Manunggal KarsoWaste Bank has several programs: Waste Saving and Producing Handicraft from Recycled Material. These programs are intended to encourage the people to participate more actively in various waste management programs. It is important recalling that people (community members) are encouraged to be the subject of development rather than the object only. This condition is very relevant to Goulet (Alfitri, 2011) stating that empowerment is a real representation of people-centered development paradigm. It is also in line with Mardikanto & Soebianto (2015) stating that empowerment is to give the marginal people (community member) an opportunity that encourages them to engage actively in various development programs.

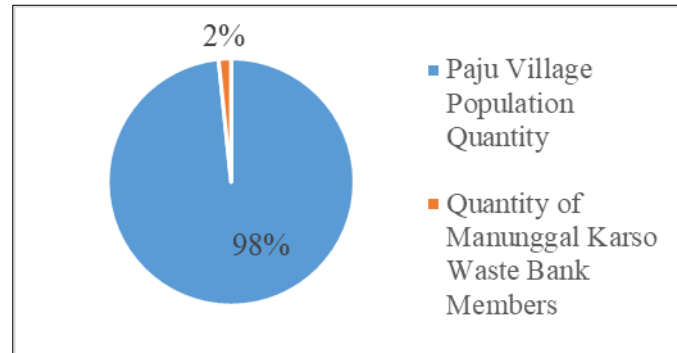
The waste saving program is implemented through encouraging the members of Manunggal Karso Waste Bank to collect and to sort wastes at household level and then to deliver non-organic waste (e.g. water bottle, plastic, etc.) to the management. These non-organic wastes are recorded by the manager in each member's incoming waste logbook. The members can exchange the wastes they deposit for cash. Nevertheless, majority members prefer saving system, where they will take the cash they save as a result of exchanging waste to the manager if they feel the amount is large enough.

Furthermore, these non-organic wastes become material in the Program of Producing Handicraft from Recycled material. The management of Manunggal Karso Waste Bank empowers its members to make various waste recycling products. Some products have been produced successfully by Manunggal Karso Waste Bank: bag made of used plastic

and muslimah veil with patchwork accessories. These varying recycled products with economic value will be studied in the next sub section.

4.2. Community Participation in Manunggal Karso Waste Bank

The result of research shows community participation in joining Manunggal Karso Waste Bank as the member is fairly low. Manunggal Karso Waste Bank can only record a total of 60 members. This condition is disproportionate to the total population of Paju Village, 3,625 people. It is not in line with the importance participation in community empowerment. Meanwhile, participation is an aspect determining a successful community empowerment (Narayan, 2002). Community participation is very important in strengthening community empowerment (Mardikanto, 2010). The ratio of the number of Manunggal Karso Waste Bank members to the total population of Paju Village can be seen in Figure 1 .



Source: research results, 2024.

Figure 1 Comparison Number of Members of the Manunggal Karso Waste Bank with the Population of Paju Subdistrict in 2023

Figure 1 shows the quantity of population in Paju Village joining Manunggal Karso Waste Bank as the member is very low. Figure 1 also shows that only 2% of Paju Villages's population is enlisted to be the members of Manunggal Karso Waste Bank. From Figure 1, it can be seen that the community-based waste management through Manunggal Karso Waste Bank in Paju Village of Ponorogo Regency is still inhibited by low community participation. This condition is not in line with community's participation in development. Community participation is the basic aspect of waste management (Jomehpour & Behzad, 2020). Community participation is an important aspect in development empowerment and implementation (Uddin, 2019). Meanwhile, community empowerment is a representation of development democratization in achieving Good Governance (Wrihatnolo and Dwidjowijoto, 2007).

The low member participation is also shown in the meeting held for discussing the Waste Savings Program. This Waste Savings Program is held routinely once a month, in which the management convenes all members of Manunggal Karso Waste Bank in a meeting. This meeting is aimed at collecting wastes from each of members and then weighing and recording them. The management of Manunggal Karso Waste Bank will record the wastes deposited by each member in the incoming waste logbook. This meeting is usually held through providing training on the production of recycled handicraft.

The result of research shows that originally the members attended the meeting in this Waste Saving Program enthusiastically. But, their enthusiasms reduced gradually as shown with the less number of members attending the meeting. It is because the meeting is often held not on time so that it lasts all day long from morning to evening. This condition is due to the management that should wait for the presence of waste collector often coming late to the event. Meanwhile, the waste collector plays a very important part in weighing and buying the sorted wastes that have been collected by the members of Manunggal Karso Waste Bank.

This uncertainty in the time for weighing sorted waste leads the members to attend the event reluctantly. It is recalling that majority members of Manunggal Karso Waste Bank are housewives having domestic chores to do. This condition makes the meeting in the Waste Saving Program unsustainable. It is not in line with the importance of empowerment program sustainability. Najiyati, *et al* (2005) states that sustainability is an important aspect of empowerment output, related to the people's ability of carrying out and maintaining program sustainability. In the same vein, Yudiyanto, *et al.*, (2019) states that the output of community empowerment in waste management is, among others, sustainability.

4.3. Economic Value of Waste Recycle

The management of Manunggal Karso Waste Bank can encourage its members to present a variety of products made of recycled wastes. A variety of products have been produced successfully by the members of Manunggal Karso Waste Bank: bag made of used plastic and Muslimah veil with patchwork accessories. The products of recycled wastes produced by members of Manunggal Karso Waste Bank can be seen in Table 1.

Table 1 The products of recycled wastes produced by members of Manunggal Karso Waste Bank

No.	Products	Price
(1)	(2)	(3)
1.	Bag made of used plastic	IDR 40.000,00
2.	Muslimah veil with patchwork accessories	IDR 20.000,00

Source: research results, 2024.

From Table 1, it can be seen that the products of recycled wastes produced by the members of Manunggal Karso Waste Bank have fairly high economic value, while they are made of non-organic waste collected by all members. It is in line with Swift & Levin (Mardikanto, 2010) stating that empowerment is intended to encourage the people accessibility to various resources existing. On the other hands, this indicates that non-organic wastes have fairly high economic value if they are managed adequately. It is relevant to Hoesein (2020) stating that waste management is closely related to economic value.

Bag products made of used plastic produced by the members of Manunggal Karso Waste Bank are sold at IDR 40,000 price. This price is fairly high compared recalling that the bag is made of non-organic wastes collected by the members. Used plastic wraps, beverage packaging, instant noodle wrap, detergent wrap, etc. are sorted by the members by color, and then plaited to create a bag. This indicates that the recycled products produced by the members of Manunggal Karso Waste Management represent the economic value in the value chain of waste management. It is in line with Bonato, *et al.*, (2022) stating that economic value is an integral part of the development of waste management value chain. In the same vein, Gutberlet (2021) states that economic value should be taken into account in the development of waste management value chain.

On the other hand, the members of Manunggal Karso Waste Bank also produce Muslimah veil with patchwork accessories. The patchwork is obtained from the fabric left over from garment industry waste, tailors, or unfit clothing in each of households. This product represents the utilization of fabric waste. The manager of Manunggal Karso Waste Management encourages the members to buy veil at IDR 10,000 price and then design it creatively with ornaments made of patchwork (flower ornament, etc). Meanwhile, this veil designed with patchwork will be sold at the price of IDR 20,000 /piece. These varying recycled products represent the economic value of waste management in Manunggal Karso Waste Bank. It is in line with Azevedo, *et al.*, (2019) stating that economic value is important to taken into account in waste management. In the same vein, Hapsari (2019) also states that economic value constituting the increase of community income needing attention in the community-based waste management.

Products produced by the members of Manunggal Karso Waste Bank are labeled by themselves to strengthen their selling value. In addition, the manager markets these products actively in the events held by government. The manager also often entrusts these products to the events held by Living Environment Office (DLH) of Ponorogo Regency.

5. Conclusion and Recommendations

Departing from result and discussion, it can be concluded that waste management through Manunggal Karso Waste Bank in Paju Village, Ponorogo Regency is still inhibited by low community participation. It is indicated with the low participation of Paju Village people in joining Manunggal Karso Waste Bank as the members. Only 2% of Paju Village people are affiliated with Manunggal Karso Waste Bank. However, economic value can be seen from varying recycled products produced by the members. In the future, socialization should be conducted to encourage the people's interest in joining the Manunggal Karso Waste Bank to be its members. In addition, various programs designed by Manunggal Karso Waste Bank can be improved and maintained for its sustainability.

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest to be disclosed.

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