

THE SOCIO-ECONOMIC IMPACT OF WASTE BANK PROGRAM IN BANTEN PROVINCE

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ABSTRACT

The Waste Bank Program is one of the programs aimed to solve waste problems and can help contribute to the community to build the community's economy. The method used is descriptive with a quantitative approach. The purpose of this study was to determine the impact of the waste bank on the socio-economic community in Banten province. Based on data analysis of the impact of the waste bank program on the socio-economic community in Banten, namely 41.5%, it can be said that the waste bank program has contributed to the socio-economic development of the community, namely the results of the Waste Bank can be used to help buy daily necessities, recycle (recycle). items that are not used, reuse items from the waste bank program and teach people to be creative by utilizing unused items (reduce). Thus the waste bank program has an impact on the socio-economic community. One of which is contributing to growing the economy, managing waste into goods of economic value, recycling waste to reduce waste that is not of value, and reusing recycled goods. The existence of the waste bank program has an economic, environmental, social and educational impact. 1) From an economic point of view, the waste bank provides a role like banks in general, namely there is a process of saving from the acquisition of waste that has been weighed in the form of waste savings, buying and selling waste. 2) Seen from the environmental perspective, the impact of the waste bank is very beneficial for the local community, because the existence of a waste bank can reduce the volume of waste in the community's living environment and final disposal site. 3) Seen from education, the Waste Bank manager teaches customers the importance of waste that can be managed, has economic value by making crafts and recycling unused waste.

Keywords: Waste Bank Program, socio-economy, community

INTRODUCTION

The waste problem has attracted the attention of various parties, including the government and the people of South Tangerang City. The government's and the public's concern for waste problems can be demonstrated by various programs launched

by the government to overcome waste problems, such as the waste bank program, go green, the minimum waste program, and imposing taxes on the use of plastic bags in supermarkets (Gunartin et al., 2020).

It is not easy to change an individual's mindset or behavior (Muljaningsih, 2021). The

common practices found in the community, in terms of waste management, is by burying in the landfill or burning the waste (Wulandari et al., 2017). Governments around the world are forced to address waste management issues due to their detrimental impact on our daily lives. Waste is causing environmental damage, climate change, loss of animal and marine life and the spreading of diseases, as well as triggering floods and air pollution, and disturbing an area's aesthetic (Khan et al., 2022).

Indonesia is a country with a very large population and has a tendency to increase from time to time. Based on data from the Central Statistics Agency of the year 2000, the population growth had reached 206.26 million people. This number continued to increase and reached 218.86 million people in 2005. In the span of six years to the year of 2911, population growth had reached 259,940,857 people. This will result in an increasing volume of waste generated by humans every day (BPS, 2011)

Waste problems do not only occur in big cities but also occur in urban fringes and rural areas, such as Lebak, where the accumulation of solid and liquid waste reaches 60-70%. Pollution of waste is certainly very dangerous for human survival and will also have an impact on the quality of public health. Highly polluted rivers throughout the area caused by irresponsible disposal of solid and liquid waste (Antaranews, 2017). Various alternatives for waste processing have been offered, starting from the combustion process, composting, recycling. Recently, to environmentalists have socialized the waste recycling program, in addition to reduce and reuse (Marsuadi et al., 2017).

Serious handling is needed to overcome the large amount of waste production. This is because waste is one of the causes of environmental pollution which in turn will cause environmental damage. Waste management that appears so far has only been carried out conventionally, namely collection, transportation and final disposal at the Final Disposal Site (TPA). Limited land is a problem for the opening of new landfills, so that

currently the existing landfill conditions have experienced excess capacity. It is estimated that at most only around 65 percent of waste can be transported to the TPA by the institution responsible for waste and hygiene issues (Novianty, 2003)

Basically managing waste properly is the responsibility of every individual human who produces waste, maybe some of us have heard of waste banks, this garbage bank is a place to manage waste where in it can solve the problem of waste as well as possible, this has been socialized through media or posters and banners carried out by various parties or institutions that care about the environment and the government, but the waste bank has not been widely carried out by the community because the authors see that they do not have full awareness and responsibility for the waste problem. Therefore, it is necessary to be responsible for building public awareness through coaching or empowerment, where people not only know but understand about the waste problem and can manage it through a waste bank (Anggraini, 2013)

The factors that cause environmental concern are based on the way of thinking and behavior of man. The active participation of citizens is an important thing to identify in waste management actions. Efforts to preserve the environment must be initiated at the individual scane by starting by doing little Heruman, (Asteria & Environmental management refers to the objective of improving environmental quality. Therefore, we must first determine which quality is the worst, and this factor gets management priority. Preservation utilization of the environment is absolutely necessary for the realization of a sustainable environmental system so that the potential and natural wealth of Indonesia can be passed onto future generations (Taufiq, 2014).

Based on Government Regulation (PP) number 27 of 2020 concerning specific waste management, namely the collect-transport-dispose paradigm to a management that relies on waste reduction and waste management. One of the waste reduction activities is through a Waste Processing Site with the 3R Principle

(Reduce, Reuse, Recycle), hereinafter abbreviated as TPS 3R, which is a place where collection, sorting, reuse and recycling activities are carried out on a regional scale. (Peraturan Pemerintah, 2020)

Waste Bank is a place where service activities for waste savers are carried out by waste bank tellers. The mechanism of waste management in waste banks is almost the same as conventional banks in general. difference is, if people save money they get money, then through waste banks, people save money they get money (Suwerda, 2012). Thus, monthly income can be monitored according to the waste collected at the waste bank, (Fitriasari & Nurjannah, 2017) Therefore, the construction of this Waste Bank should be the initial momentum to build community collective awareness to start sorting, recycling, and utilizing waste, because waste has a fairly good selling value, so that environmentally sound waste management becomes Indonesia's new culture.

Waste bank has a double value, both materially, and also the increase in the quality of the environment. Working system of the waste bank starts with waste bank customers collecting wastes, then deposited them to the manager of the waste bank to be weighed and judged by a certain nominal. The amount is stored in the form of savings that can be disbursed at the specified time (Fianto et al., 2020).

The waste bank program is one of the government's ways to deal with recyclable waste and can reduce the amount of existing waste. The waste bank is created using the concept and management like a bank, but what is saved here is not money but garbage. The waste bank is managed by the community on a voluntary basis. This waste bank indirectly applies the concept from the community to the community, the waste is collected by the community and then managed by the community and the results will also be for the community, (Sutiawati et al., 2021)

The establishment of a waste bank is expected to be able to make a waste bank an initial medium to foster community collective awareness to start sorting, recycling, and

utilizing waste, this is because waste also has a fairly high economic value. So it is hoped that environmentally friendly waste management will become a new culture in Indonesia (Primajana, 2019). Ministry of Environment and Forestry, Monday, December 3, 2018. The Waste Bank contributes to the reduction of national waste by 1.7% (1,389,522 tons/year) with an average income of Rp. 1,484,669,825 per year. The circular economy benefits are obtained from waste management carried out by the Waste Bank by applying the 3R principle (reduce, reuse and recycle). The active participation of the community in sorting and processing waste at the source is the key to the success of the Waste Bank management (Kementerian Lingkungan Hidup dan Kehutanan, 2018)

Waste bank activities, in addition to reducing the volume of waste, can also improve the people's economy. The existence of a waste bank can also increase the income of those who are able to collect recyclable waste, in which the amount of income could reach millions of rupiah (Rusdy, 2020). The development of the Waste Bank certainly needs to be continuously monitored and evaluated because the Waste Bank Program shows an increasing trend since the beginning of its development in 2015 and reaching its peak in 2017 (Rohmat et al., 2021).

The existence of the waste bank is aimed to provide solutions in reducing the volume of waste and improving the economy of local communities (Novianty, 2013). This program had been initiated by Lebak, South Tangerang government. Socialization had been carried out to wider communities. Behavior such as littering in open land and rivers is intensively concerned, as it causes slum growth, spread of diseases, and social problems.

Targeted as a solution of the aforementioned problems, the waste bank program used a household-based management model. Reward system is implemented based on the amount of collected and managed domestic waste. This model has the objective of creating a clean and healthy living environment. Furthermore, the concept of self-

supporting economy is promoted as well. Based on the description of the background of the problem above, this research is aimed to study the socio-economic impact of the waste bank program in Banten Province.

RESEARCH METHOD

The research method used in this study is a descriptive method. Data collection techniques are by observation, interviews and questionnaires. Samples were taken using purposive sampling technique. Purposive sampling is a sampling technique of data sources or informants with certain considerations set by researchers (Sugiyono, 2009). Subjects involved throughout the study

were customers of the waste bank. In the area of 2 cities and 2 regencies, there are as many as 350 customers which were taken as the population in this study. Characteristic of sample taken in this research was individuals with sufficient knowledge on the waste bank, such as waste bank administrators and customers in each designated region.

Distribution of samples within 2 cities and 2 districts are as follows: 43 respondents from Tangerang City, 43 respondents from South Tangerang City, 40 respondents from Kab. Tangerang and 39 respondents from Kab. Lebak. With the number of samples collected 165 respondents. The following is the research location.

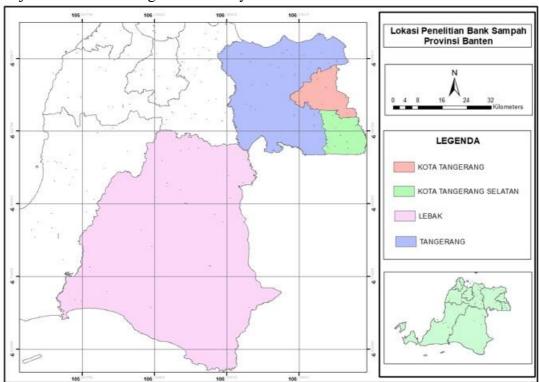


Figure 1. Map of Study Area in Banten Province

RESULTS AND DISCUSSION

Findings of study were generated from the questionnaire instrument. Eight indicators were measured in this study, namely: perceptions on the waste bank program; the environmental impact of the waste bank program; benefits of waste bank program to the community; function of the waste bank program; participation of the community; perception on the socio-economic status; perception on the per-capita income to the socio-economic status; and the perception on

education background to the socio-economic status. These findings were elaborated with the statistical analyses of socio-economic impact of the waste bank program on the community.

A. Research Findings

1. Analysis on The Perception of Waste Bank Program

Implementation of the waste bank program is determined by the perception of the community, from whom participation would be obtained. Based on the filled instruments, more than 50% of respondents showed strong

agreement to the waste bank program. Specific finding of this indicator is indicated by the Figure 2 below.

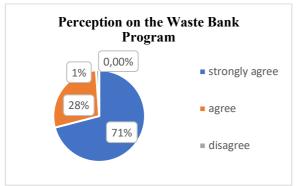


Figure 2. Respondents Perception on the Waste Bank Program

As many as 165 respondents were involved as the informant. The question item asked in this first indicator was the degree of agreement on the existence of the waste bank program to reduce the amount of waste around the living environment. 117 respondents or equal to 71% of the total taken samples showed their strong agreement. Meanwhile 47 or 28% respondents expressed their agreement, and 1 respondents or equal to 1,1% showed disagreement toward the question item.

Beside perception on the implementation of the waste bank program, environmental impact is the other indicator to analyze the effect of waste banks. A condition that acts as a powerful determinant of waste bank impact is whether the environment has become cleaner and healthier. This program of waste management has the primary objective of reducing the amount of waste through the act of reusing and recycling. Therefore, the success of this program is seen from the cleaner environment.

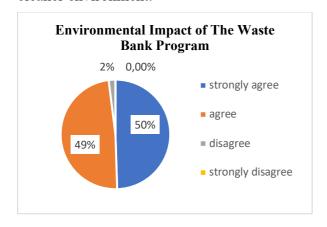


Figure 3. Environmental Impact of The Waste Bank Program

In the study area, direct observations were carried. The finding indicated that settlements with integrated waste bank programs are having cleaner and healthier environments. In this indicator, information on whether the environment is cleaner and more comfortable as the waste bank program implemented was asked. Figure 3 showed that the majority of respondents stated their strong agreement on the question item. In the sequential order, 82 respondents or as many as 50% showed their strong agreement, 81 respondents or 74% agreed, and 2 respondents or as 2% disagreed.

Reciprocality between program administrator and customers or society had to be worked hand in hand. Continuity of the waste program that involves the society determined by mutual relationship. In this study, an indicator of the benefits of waste banks to society was measured. Findings from filled questionnaires for this indicator is explained in Figure 4 below.

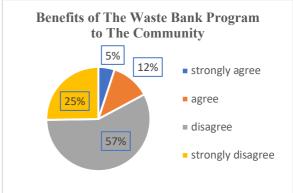


Figure 4. Benefits of The Waste Bank Program to The Community

Understanding of benefits is oftentimes correlated with economic parameters. Implementation of the waste bank program is potentially utilized as the source of income. The question item was set in a negative statement, which questioned whether the community does not get any benefit from the waste bank program. The findings indicated that 9 respondents or 5% agreed, 20 respondents or 12% agreed, 94 respondents or 57% stated disagree, 42 respondents or as much as 25% stated strongly disagree. This

inferred that most customers of the waste bank had already felt or percepted the economic advantage of the waste bank.

Final disposal is not the objective of the waste bank program. However, the encouragement to the community on waste recycling is as urgent as promoting the program itself. Without recycling, the amount of waste potential to be produced will not be decreased. Beside collecting and managing waste, this program also seeks to utilize reusable and recyclable waste for further uses. In this study, awareness on this scheme is needed to form pro-environmental behavior.

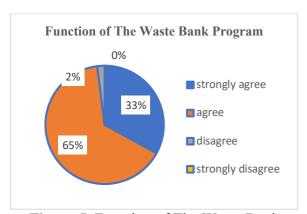


Figure 5. Function of The Waste Bank Program

As a relatively new and unique concept. The waste bank is often seen as a source of income. However, the essence of this program is to process recyclable wastes. To measure the availability and community awareness toward this program, this indicator is used through the question of whether the waste bank can facilitate the recycling process. Figure 5 shows that 55 respondents or 33% expressed strong agreement; 108 respondents or 65% agreed; and 2 respondents or 1% disagreed.

Behavioral impact of the waste bank to the community is the ability to participate in pro-environmental action. Reuse is the activity that utilizes used goods to avoid the production of non-biodegradable wastes. The existence of a waste bank program within the community ought to indirectly shape the habit of reuse. Perception toward this was measured in this fifth indicator, which is participation of the community. The figure below indicated the findings from the filled instrument on whether the respondents agree with the statement that the waste bank has built participation on waste reuse.

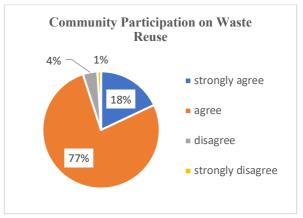


Figure 6. Community Participation on Waste Reuse

Figure 6 indicates that the majority of respondents agreed that the waste bank had formed waste reuse participation. Specifically, 127 respondents or as many as 77% expressed agreement. Meanwhile, as many as 29 respondents or equal to 18% of the whole sample had strongly agreed. 7 respondents or 4% disagreed and 2 respondents or 1% strongly disagreed.

2. Based on Socio-Economic Society (Income, Social Status and Education)

The socio-economic status of the community was measured as the dependent variable in this study. The waste bank program empowers its customers to find economic opportunities from waste management. From collecting and sorting waste, people in the community can earn a certain sum of money. Socio-economic parameters in this study consist of: perception on the socio-economic status; perception on the per-capita income to the socio-economic status; and the perception on education background to the socio-economic status.

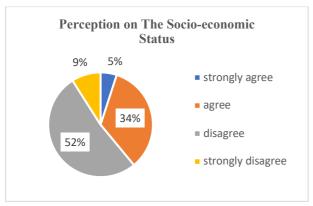


Figure 7. Perception on The Socio-economic Status

Measurement of perception on socioeconomic status was specified into the aspect of income. This indicator used to measure whether high income is the parameter of socioeconomic status in the society. Based on the findings shown in Figure. 7, the respondents disagreed with the statement of the instruments. Majority of respondents, 85 respondents or 52% disagreed. Meanwhile 9 respondents 5% of respondents stated strong agreement, 56 respondents or 34% agreed, and 15 respondents or 9% strongly disagreed.

Derivatives of high income as the parameter of socio-economic status is the positioning of the social stratification. This indicator measured whether the society put members who had higher income on the higher social stratum. This is in line with Zakia (2022) who stated that wealth is one of determining factors of socio-economic status.

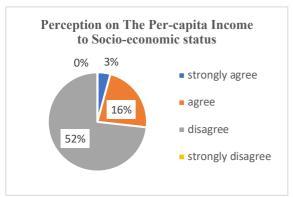


Figure 8 Perception on The Per-capita Income to The Socio-economic Status

Social stratification based on wealth is indicated by respect from society to those with higher income. Measurement of this perception helps to understand parameters of

welfare in the community. Findings in Figure 8 showed that wealth is not the key factor in measuring socio-economic status. Response of respondents indicates that most of the respondents expressed disagreement, which is 86 respondents or equal to 52%. Meanwhile, 5 respondents or 3% of respondents stated strongly agree, 27 respondents or 16% agreed, and 47 respondents or 28% stated strong disagreement.

The other parameter of measuring socio-economic status is education level. This item is intended to study the perceptual tendency of respondents whether level of education can represent their income. Meaning of education in this indicator is the year of schooling. Most of the respondents were adequately educated. However, based on the filled questionnaire, education is not the key factor that influences the sum of income they obtained.

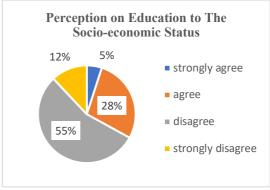


Figure 9. Perception on Education to The Socio-economic Status

According to Pinem (2016). Education and income are two factors that influence environmental awareness. However, the level of education cannot justify socio-economic status. Findings presented in Figure 9 inferred that education is not the determinant of income. Specifically. 91 respondents or equal to 55% out of the whole sample stated their disagreement. Meanwhile 9 respondents or 5% of respondents stated strong agreement, 46 respondents 28% agreed, or and 19 respondents 12% expressed or strong disagreement.

3. Statistical Analysis on The Socioeconomic Impact of The Waste Bank.

From the regression analysis below, the results are calculated from the questionnaire. The correlation value (R-square) was 0.415 or 41.5%. The proportion of variance from the Waste Bank program to the socio-economic conditions of the community is 41.5% while 58.5% is influenced by other variables outside this study. This value is interpreted as the two research variables have an impact on these two variables. The second step, the researcher conducted an F test to analyze the impact of the independent variables. The results of the F test can be seen in the following table.

Based on the ANOVA statistical analyses, the calculated F value is 115.4 with a sig value of 0.000. If sig < 0.05 then the equation is significant (Ho is accepted) while if sig > 0.05 then the equation is not significant (Ha is accepted). Thus, the hypothesis in the table above between conceptual understanding and environmental awareness shows that the calculated F is 115.4 with a sig value (0.000) <0.05, the regression coefficient is significant. The magnitude of the regression coefficient of the independent variable on the socioeconomic community can be seen in the following table.

Based on the regression coefficient, the regression value of the residual value is 0.644. This indicates that there are other variables that have a greater influence on the socio-economic community than the waste bank program. In addition, the results of the t test for this residual value are sig. (0.000) < 0.05 which indicates that this residual value is significant to the waste bank program variable. To find out the contribution of the independent variable, it can be seen below figure 10.

Degree of Socio-economic Impact = 3.003 + 0.54 Waste Bank Program

Figure 10. Calculation of Socio-economic Impact

In the Unstandardized and Standardized regression equations, all variables have positive values. This shows that the two independent variables have a positive contribution to the dependent variable. The higher the value of the

independent variable, the higher the value of the dependent variable.

1) Socio-Economic Conditions of the Banten Province Community

The socio-economic conditions of the people of Banten have increased from year to year in accordance with the developing economic growth. This is because a lot of economic growth is supported by business fields that are indeed experiencing accelerated growth. especially the manufacturing industry, wholesale-retail trade and car-motorbike repair, construction business, real estate, transportation and warehousing and information and communication business fields.

The economic structure of Banten itself since 2015-2017 is dominated by the tertiary sector. Conversion of agricultural land into industrial land due to shifts modern era, higher economic needs, so when agriculture it is felt that it does not meet the income of the community, there will be changes livelihood (Erista, 2014)

2) Impact of the Waste Bank Program on the Socio-Economic Society

The existence of this Waste Bank is enough to have an impact in terms of economy, environment, social and education. From an economic point of view, waste banks provide a role like banks in general, namely there is a process of saving from the acquisition of waste that has been weighed in the form of waste savings, buying and selling waste and others. Judging from the environment, the impact of the waste bank is very beneficial for the local community. because the existence of a waste bank can reduce the volume of waste in the community's living environment and final disposal site. seen from education, the manager of the Waste Bank teaches customers the importance of waste that can be managed, has economic value by making crafts and recycling unused waste. The existence of a waste bank also has an impact on the social community.

Many people make activities from waste banks in their neighborhoods. People who are active customers usually become more internal in interacting with other customer members so that solidarity appears in the

community. The community, administrators, members of the waste bank contribute to each other in reducing waste in the environment.

3) The Contribution of Waste Bank on Social Life

Waste Banks have a role to reduce the volume of waste in the community. Communities who have been given counseling to sort their own household waste choose to save waste instead of throwing it away. so that they have results from the garbage that is sorted by the community. It is hoped that the Waste Bank program in each region can reduce the volume of waste in the community.

The customer's waste bank savings in each waste bank have no interest, but there is a discount when picking it up and usually the discount depends on the agreement of each waste bank because in each district, the city is different. Customers who participate in the waste bank program receive a savings book for archival purposes and record the results of waste savings that have been weighed every month or every 2 weeks. withdrawal of customer savings can be done as needed or agreed upon by the waste bank management to take the money that has been saved from the weighing results.

This is similar to Anggraini's research, 2013 with the results: there is an impact that is felt by the community with the help, and it is quite well felt by the residents by the existence of a waste bank, which is to help pay for their children's education, although the results are not too big. And the state of the environment adds a clean aesthetic value to society. Thus, solidity is built in society and makes individuals know each other, strengthens relations between neighbors in the community

The magnitude of the impact of the waste bank program on the socio-economic community in Banten is 41.5%, it can be said that the waste bank program has contributed to the socio-economic development of the community. Thus the waste bank program has an impact on the socio-economic community. one of which contributes to growing the economy, manages waste into goods of economic value, recycles waste to reduce

waste that is not worth it, and reuses recycled goods.

In line with the research conducted by Fitriasari & Nurjannah, 2017 "Analysis of the Effect of the Malang Waste Bank (BSM) on the Income of the Malang City Community". The results of the study stated that the Malang Waste Bank Savings did not affect the income of the Gading Kasri Village community, this indicated that BSM savings had not become the main source of income for the Gading Kasri Village community. because most people have their own main source of income, and the Malang Waste Bank Savings is only a side income.

CONCLUSIONS

The existence of a waste bank has an impact on the social community. People who are active customers usually become more internal in interacting with other customer members so that solidarity appears in the community. The community, administrators, members of the waste bank contribute to each other in reducing waste in the environment. The magnitude of the impact of the waste bank program on the socio-economic community in Banten is 41.5%, it can be said that the waste bank program has contributed to the socioeconomic development of the community. the results of the Waste Bank savings can be used to help buy daily necessities, recycle items that are not used, reuse items from the waste bank program and teach people to be creative by using goods unused (reduced).

Thus, the waste bank program has an economic, environmental, social and educational impact.

- 1) Based on an economic point of view, the waste bank provides a role like banks in general, namely there is a process of saving from the acquisition of waste that has been weighed in the form of waste savings, buying and selling waste.
- 2) Seen from the environmental perspective, the impact of the waste bank is very beneficial for the local community, because the existence of a waste bank can reduce the volume of waste in the

- community's living environment and final disposal site.
- 3) Seen from education, the Waste Bank manager teaches customers the importance of waste that can be managed, has economic value by making crafts and recycling unused waste.

RECOMMENDATIONS

There needs to be socialization about awareness of reducing the use of plastic goods in order to reduce the volume of waste and contribute to protecting the environment and developing a waste bank program for the socio-economic community.

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