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Waste Bank Management In Waste Processing At Environmental Health Diploma Program In Magetan Campus

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ABSTRACT

Waste problem in Magetan is harder problem. The waste occurrence rate that enters to the waste landfill site reaches ± 149.15 m³/ day. Therefore, it is needed to build new management innovations to manage waste in schools and campuses. Moreover, this study aimed to describe management concept of the "Kesling Jaya" waste bank. Data collection was conducted by observation and documentation. The data analyzing techniques were data reduction, data presentation, and conclusion. The results showed that waste bank system that was found in several schools had not been implemented properly. This was due to student's overcrowded schedule and the fact that they had not developed awareness regarding waste management by using waste bank system. Furthermore, there were 2 designs which were made for "Kesling Jaya" waste bank. Those were long-term and short-term designs. Long-term design was done by conducting training in rural areas, cities, and schools. This project was done by cooperating with lecturers through community service program while its development was collaborated with students' cooperatives (KOPMA). The short-term design was done by implementing entrepreneurship courses into waste bank activities. The core team, lecturers and Entrepreneurship course instructors directly socialized about waste bank. Continuous socialization had an impact on student's participation in saving at the waste bank. The success of "Kesling Jaya" waste bank was measured by using input, process, and output indicators. Input indicator involved supervisor, lecturers and instructors of Entrepreneurship courses as a companion during the implementation of the "Kesling Jaya" waste bank. The running process of waste bank system could be seen from students' participation to save in the waste bank. Output indicator was seen from the waste bank report about the number of clients and the amount of waste that was being saved that increased to be 85%.

Keywords: Waste bank, Management, Waste processing

INTRODUCTION

Background

As what it was quoted in the interview with Director General of Waste and Hazardous Waste Processing of the Ministry of Environment and Forestry, Tuti Hendrawati Mintarsih, stated that "In 2016, there was around 65 million tons of waste per day that was produced by Indonesian people. This amount increased one ton of waste per day."⁽¹⁾

Waste bank had been developed fast and followed by increasing income. However, waste bank program would experience difficulties in achieving its objectives if it was not accompanied by the implementation of proper and good management system. A good management system would be able to implement waste bank programs that had been planned gradually, continuously and systematically. This was due to the presence of management functions that had to be implemented, including: planning, organizing, actuating, and controlling.⁽²⁾

Students were one of permanent users in school or campus that often did activities even in holiday, thus, students became one of waste producers in their environment. In order to maintain sanitation in school or campus, students were expected to participate in waste management by using waste bank system.

The observation that was conducted by researchers concluded that it was necessary to build "Kesling Jaya" waste bank management in order to reduce waste volume that would be disposed to landfill site and to invite student's participation to be able to process waste that was considered as unworthy goods into valuable goods to add school or campus' cash. In order to evaluate students' participation in processing waste by using waste bank system, this study was conducted under the title of "Waste Bank Management in Waste Processing at Environmental Health Diploma Program in Magetan Campus."

METHODS

This research used descriptive method. Descriptive research was an inquiry of problem by describing or explaining the condition of subject or object of the study at a time of research based on facts appeared including data interpretation and data analysis. The location of the study was carried out at the Diploma III Study Program of Environmental Health in the Magetan. Data obtained from the questionnaire distributed to 250 respondents taken by simple random sampling. The data obtained were reported descriptively

RESULTS

Design of Waste Bank Management

There were 4 stages of waste bank management. Those were planning, organizing, actuating and controlling;

1. Planning

Long-term Planning Waste bank training in rural area, cities and schools. Profit sharing from the establishment of student cooperatives. Short-term Planning Applying entrepreneurship courses for the students to manage the "Kesling Jaya" waste bank, Involving new students as a core team member of "Kesling Jaya" waste bank, Controlling price changes, Socializing the program, Reporting the program.

2. Organizing

Head of Environmental Health Diploma Study Program in Magetan gave direction and appealed to academic community for participating in waste bank program in accordance with established regulation., Head of Student Affair had duty and responsibility in implementing "Kesling Jaya" waste bank., Entrepreneurship lecturer was in charge of providing guidance and direction in implementing "Kesling Jaya" waste bank program. The core team and instructor of entrepreneurship course had a role in running the operational of waste bank and reporting waste bank activities.

3. Actuating

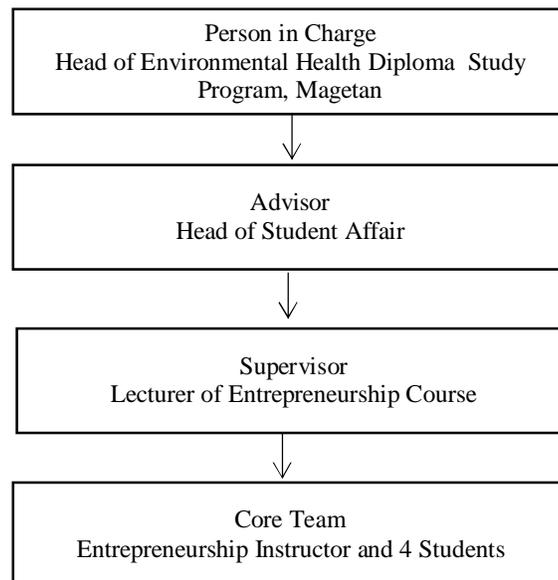


Figure 1. Actuating of "Kesling Jaya" Waste Bank

Below was the actuating stages that carried out at the "Kesling Jaya" waste bank. The flow of "Kesling Jaya" waste bank was line.

4. Controlling

Controlling was very important because the "Kesling Jaya" waste bank had only been established for 7 months, thus, a controlling function would be a benchmark of the success of system that was being implemented and the progress of development of the "Kesling Jaya" waste bank in the future. Some controlling activities which were needed were, The success of the work plan, Repairing a system that could not be implemented properly.

Implementation of "Kesling Jaya" Waste Bank Management

In implementing the management of "Kesling Jaya" waste bank, there were several strategie. waste bank training cooperated with the community service program that was carried out by lecturers of Environmental Health Diploma Study Program in Magetan. It was enforced a profit sharing system between student cooperatives and waste bank. The client's money was obtained from waste bank that was developed by establishment of KOPMA (Student Cooperatives).

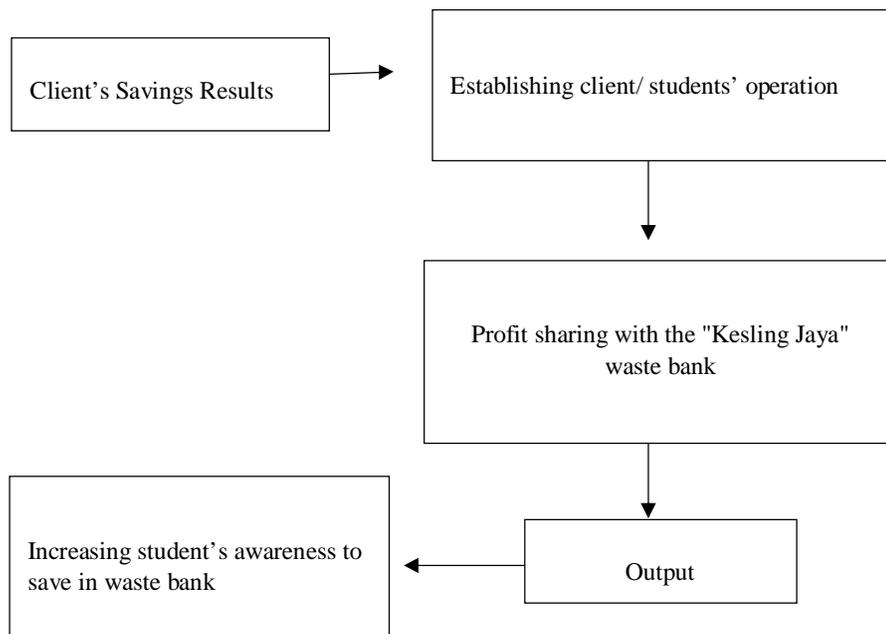


Figure 2. The flow of "Kesling Jaya" Waste Bank

Evaluation and Secretariat Report of Waste Bank

Table 1. Evaluation Result of "Kesling Jaya" Waste Bank

No	Date	Income	Fine	Waste Amount
1	4 June 2018	118,910	38 people	6.9 kg
2	25 June 2018	119,770	25 people	9.5 kg
3	2 July 2018	92,350	21 people	7.7 kg
4	16 July 2018	90,129	22 people	9.9 kg
5	23 July 2018	96,320	30 people	7 kg
6	30 July 2018	119,990	42 people	7.8 kg
7	9 September 2018	287,000	15 people	66 kg
8	26 September 2018	248,000	20 people	51 kg
9	3 October 2018	2014,400	12 people	41 kg
10	10 October 2018	192,000	12 people	38 kg
11	17 October 2018	192,390	12 people	26.8 kg

Based on the table 1, it showed that student's participation in "Kesling Jaya" waste bank program had increased in terms of income, student's participation, and the amount of waste that was collected.

DISCUSSION

According to⁽³⁾, waste management needed a control and utilization of all factors and resources which required a plan to achieve its objectives. Management had four main functions; those were planning, organizing, actuating, and controlling (POAC). There were several things that made planning could not be implemented optimally. Some of them were picket schedule that was constrained because of student's overcrowded activities and the absence of maximum assistance from the teachers/ lecturers. Therefore, the picket schedule could not be carried out properly based on the plan. Waste bank management activities in several schools had not been done well. This was due to lack efforts in increasing student's awareness about the fact that if waste was managed properly, it would be a blessing.

Organizations were made by humans in order to do or achieve certain things, which could not be carried out alone or individually. It was the same case of the implementation of "Kesling Jaya" waste bank, thus, the organizational structure was formed⁽⁴⁾ Organization of "Kesling Jaya" waste bank was lines organization as below:

1. Head of Diploma III Study Program of Environmental Health in Magetan gave direction and appealed to academic community to participate in waste bank program in accordance with established regulation.
2. Head of Student Affair had duty and responsibility in implementing "Kesling Jaya" waste bank.
3. Entrepreneurship lecturer was in charge of providing guidance and direction in implementing "Kesling Jaya" waste bank program.
4. The core team and instructor of entrepreneurship course had a role in implementing the operational of waste bank and reporting waste bank activities.

This planning was divided into 2 plans; those were long-term planning and short-term planning. In long-term planning, the activity was done by giving waste bank training in rural areas, cities and schools. Long-term planning required a relatively long time on its implementation.

Incomes that was obtained from the waste bank were developed by establishing KOPMA. The development of waste bank into student cooperative activities aimed to increase the students' empathy to save at the waste bank and to develop it into other businesses such as photocopying and binding business. Furthermore, it was expected to give a mutual symbiosis of mutualism such as the slogan made by students in socialization activities "FROM US FOR US." Applying entrepreneurship courses in order to manage "Kesling Jaya" waste bank was a concrete manifestation in implementing vision and mission of Diploma III Study Program of Environmental Health in Magetan, which was namely industrial sanitation and entrepreneurship. Binawan⁽⁵⁾ stated that the habit of littering was happened in almost all communities, not only the poor, even those with highly educated background. The implementation of waste bank system would make students to accustomize self in processing waste properly.

Waste processing management by using waste bank system could be carried out carefully with a good planning and implementation because through the absence of good planning and implementation, it could not implement well or even stop. In an effort to anticipate the cessation of waste processing management program by using waste bank system, the researchers took the following strategies:

The management of "Kesling Jaya" waste bank involved various parties, starting from the head of Diploma III Study Program of Environmental Health in Magetan who had a role as a person in charge and head of student affairs as an advisor of waste bank program. Technically, lecturer and instructor of entrepreneurship course had a role to accompany the implementation of waste bank. There was also a core team, who was consisted of 1st and 3rd semester students (6 people). The team that carried out the tasks in operating waste bank was given rewards in order to keep the operation of 'Kesling Jaya' waste bank. Reward was obtained from 30% of sales.

The 70% of income was used for the development of the "Kesling Jaya" waste bank into another business, namely KOPMA, which was operated by using profit sharing system. This aimed to increase students' awareness that waste bank activities, which were coming from useless waste could be used to build other businesses. In addition, clients' savings would increase as a result of benefits obtained from the KOPMA.

Counseling and socialization were carried out continuously by the core team and researchers towards students, thus, the students had a high awareness to save at "Kesling Jaya" waste bank.

In the long term planning, it would be developed waste banks in rural areas, cities and schools that had not had waste bank yet. Campus that had a large area of land was expected to be able to be a collector. This also aimed to open new jobs for innovative students to be able to develop "Kesling Jaya" waste bank.

The success in implementing a waste management by using waste bank system could be measured by using some indicators. The author used the indicator of success by following the system flow as follows: input, process and output.

CONCLUSION

Kesling Jaya waste bank management plan consisted of; Long term planning, Waste banks training in rural areas, cities and schools., Profit sharing from the establishment of student cooperatives (KOPMA) Short term planning Applying entrepreneurship courses for students to manage "Kesling Jaya" waste bank Involving new students in "Kesling Jaya" waste bank Controlling price changes Socializing the program.

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