

EVALUATION OF THE 3R (REDUCE, REUSE, RECYCLE) WASTE DISPOSAL SITE PROGRAM IN THE CONTEXT OF REDUCING WASTE IN SUKABUMI CITY

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Abstrak. Rapid population growth has had an impact on the environment, both positive and negative impacts in various fields, one of which is the waste problem which is still one of the national strategic issues. Waste management in Indonesia is regulated in Law Number 18 of 2008 concerning Waste Management and for the management of household waste or the like, it is operationally strengthened with the issuance of Presidential Regulation Number 97 of 2017 concerning National Policies and Strategies for the Management of Household Waste and Waste Similar to Household Waste. The 3R Garbage Disposal Program (reduce, reuse, recycle) is an alternative in processing household waste and similar household waste, where the main concept of waste processing in the 3R Disposal Site is to reduce the quantity and/or improve the characteristics of the waste to be disposed of. processed further at the Final Disposal Site. From 2009 to 2018, Sukabumi City has built 11 units of 3R Garbage Disposal with a processing capacity of 2 tons/day each spread over several villages in the Sukabumi City area, but only 9 3R Disposal Sites are still active. up to this moment. The purpose of this study is to analyze and describe the achievement or success of the 3R Waste Disposal Site program in the context of reducing waste in Sukabumi City. This study uses the CIPP method, which is an evaluation model on the Context, Input, Process and Product aspects. Data obtained from the results of document analysis, field observations and interviews. Based on the data analysis, it can be concluded that the 3R Waste Disposal Site program is feasible to be implemented as an effort to achieve the target of reducing household waste and similar household waste in accordance with regional policies and strategies in waste management. The Context aspect is categorized as good and can be the main basis for program implementation, the Input aspect is in sufficient category, the need for managerial Human Resources and technical Human Resources in the management of the 3R Waste Disposal Site and the fulfillment of maintenance costs to support the success of the program, the Process aspect is categorized as sufficient, needs optimization in the utilization of available facilities and infrastructure as well as innovation in building cooperation with the private sector for funding mechanisms, and the Product aspect is categorized as Good and still optimizing the performance of the 3R Waste Disposal Site management so that the 30% waste reduction target in 2025 can be achieved.

Keywords: CIPP; waste reduction; waste dump reduce, reuse, recycle

I. INTRODUCTION

Rapid population growth at this time has had an impact on the environment, both positive and negative impacts in various fields, one of which is the waste problem which is still one of the national strategic issues. With the same commitment to jointly implement Sustainable Development Goals (SDGs) with other countries, Indonesia has been aligning the goals with the country's national strategy to eradicate poverty, promote shared prosperity, and improve environmental quality [1]. Garbage is the residue of human daily activities and/or natural processes in solid form [2], based on this understanding, it can be understood that every human being must produce waste, so that the amount of waste generated in an area will increase. Waste generation in Sukabumi City in 2019 was 177.96 tons/day and increased in 2020 to 178.67 tons/day. The amount of waste generation shows the amount of waste generation that must be handled and reduced, and of course it will require adequate equipment in operational technical aspects. Aspects of operational techniques on the concept of integrated solid waste

management, related to the availability of equipment and supplies for storage up to final processing of waste for both handling and reducing waste [3] [4]. One of the problems of waste management in Sukabumi City is the limited land for the Final Processing Site for waste and limited infrastructure and facilities for the Final Processing Site [5]. Currently only available land for Final Processing Site \pm 1.2 Ha with a service life of only about one year, therefore the Sukabumi City Government must find a new expansion area to increase the lifespan of the Final Processing Site. One alternative to waste management to anticipate this is to re-optimize the 3R Waste Disposal Sites in the Sukabumi City area in accordance with the directions contained in Law No. 18 of 2008 related to waste management. The mandate was later revealed through Presidential Regulation number 97 of 2017 concerning National Policy and Strategy for the Management of Household Waste and Types of Household Waste, where this policy is a national waste management master plan whose achievements are measured in stages, namely reducing waste by 30% and handling waste. reaching 70% of the generation

rate in 2025. Jakstranas is further elaborated in detail in Regional Policies and Strategies.

The community-based independent waste management system with the implementation of the 3R Garbage Disposal Site has been widely applied in various places, including in Sukabumi City. Some have been successful in answering various problems, but not a few are stagnant and even failed. This has an impact on the emergence of problems that pose a threat to the continuity of the waste management system in the future. Therefore, it is necessary to evaluate the 3R Waste Disposal Program that has been running in Sukabumi City to achieve the 30% waste reduction target by 2025. The implementation of the 3R Disposal Site is directed to the concept of Reduce, Reuse and Recycle (recycling), which is done to serve a community group that serves a minimum of 200 households or heads of families.

The main concept of waste processing at the 3R Waste Disposal Site is to reduce the quantity and/or improve the characteristics of the waste, which will be further processed at the Final Processing Site [6][7][8]. The 3R Garbage Disposal Site is expected to play a role in ensuring the increasingly critical need for land for the provision of Waste Final Processing Sites in urban areas [9]. This is in line with the national policy, to place the waste final processing site at the bottom of the hierarchy, so as to minimize the residue to be filled in the waste final processing site [10]. The implementation of the 3R Waste Disposal Site must be carried out in a synergistic and sustainable manner through: the process of involving the community and the Regional Government, the process of empowering/strengthening the community and the Regional Government, as well as the process of fostering and assisting the Regional Government for the sustainability of the 3R Waste Disposal Site [11].

From 2009 to 2018, Sukabumi City has built 11 (eleven) units of 3R Garbage Disposal Sites with a processing capacity of 2 tons/day, spread over several villages in the Sukabumi City area. However, in 2019 only 9 (Nine) 3R Waste Disposal Sites are still operating. The main parameter that most influences the non-functioning of the 3R Disposal Site is the potential for the sustainability of the program, therefore in an effort to optimize the performance and sustainability of the 3R Disposal Site in waste reduction, it is necessary to evaluate the 3R Disposal Site program in Sukabumi City.

II. RESEARCH METHODS

This research was carried out in 9 (nine) locations of 3R Garbage Disposal in Sukabumi City, including: Independent 3R Clean Waste Disposal Site, Karang Tengah Village, Tampo Mas 3R Garbage Disposal Site, Baros Village, Amanatul Ummah Sejati 3R Garbage Disposal Site, Limusunngal Village, 3R Brilliant Disposal of Garbage, Sukakarya Sub-district, Resik 3R Disposal Site, Cikundul Sub-district, Sindang Sari 3R Disposal Site, Sindang Sari Sub-district, 3R Garbage Disposal at Taman Asri Subangjaya Village, Basmici 3R Disposal Site in Cikondang Village, Sindang Palay 3R Garbage Disposal Site, Sindang Palay

Village. This study uses a descriptive approach, the data collected is generally in the form of descriptions not numbers [12], in the form of descriptions and descriptions of the people concerned regarding the 3R Waste Disposal Site program. The data were collected with careful observation, including descriptions in a detailed context accompanied by notes from in-depth interviews, as well as the results of analysis of documents and notes. The research was conducted using the CIPP evaluation model (Context, Input, Process, Product) through several research steps, namely: literature study and observation aimed at collecting information and theories related to the 3R Waste Disposal Site program, followed by evaluating the implementation in the field so that recommendations for program feasibility and program performance improvement can be made.

Data collection

The collection of data, information and documentation related to the 3R Waste Disposal Site program in Sukabumi City was carried out by means of observation, interviews and document analysis.

Evaluation Model

The evaluation model in this study is the CIPP (Context, Input, Process, and Product) model developed by Daniel Stufflebeam. This is an evaluation model which provides an analytical and rational basis for programme decision-making, based on a cycle of planning, structuring, implementing and reviewing and revising decisions, examined through a different aspect of evaluation –context, input, process and product evaluation [13]. The following is a description of the CIPP evaluation model (Context, Input, Process, and Product):

a. Context Evaluation

Context Evaluation, serving decisions at the planning level. At this level, it focuses more on efforts to determine the needs that will be used as the basis for program development, including the formulation of program objectives. The main focus at this level is the background, legal basis and objectives of program implementation. Input Evaluation, serving decisions on organizational activities. Determine the available resources, alternative strategies that need to be used in the program, as well as the best planning for meeting needs [14]. The main focus at this level is the facilities and infrastructure available at the 3R Waste Disposal Site, human resources managing the 3R Waste Disposal Site, as well as operational and maintenance costs in the implementation 3R Garbage Disposal. Process Evaluation, serving decisions related to program implementation [13]. The main focus at this level is the utilization of facilities and infrastructure available at the 3R Waste Disposal Site, the guidance carried out in order to increase the capacity of human resources managing the 3R Waste Disposal Site, and funding mechanisms for the operation of the 3R Waste Disposal Site. Evaluation of the process is called monitoring, so monitoring is an effort to evaluate the process of implementing a program.

Product evaluation, serving decisions related to program achievement and the possibility of re-planning. Therefore, the focus of this assessment includes: what results were obtained, the extent to which needs have been met or

reduced, what should be done after the program runs. The main focus at this level is the percentage of waste reduction in accordance with the policy targets and strategies for managing household waste and waste similar to household waste (jakstrada) in Sukabumi City, products produced from 3R Waste Disposal Sites, and accountability in the implementation of 3R Waste Disposal Sites.

III. RESULTS AND DISCUSSION

The results of the evaluation of the program for reducing, reuse, recycle (3R Waste Disposal Sites) programs in the context of reducing waste in Sukabumi City with the CIPP model are as follows:

a. Evaluation of Program Context

The results of the evaluation of the Context aspect stated that the program was included in the Good category, this can be seen from the results of the analysis using three indicators, namely:

Program Background

According to (Kartikawan [14]) waste management is all activities carried out in handling waste from the time it is generated to its final disposal. Broadly speaking, activities in waste management include controlling waste generation, waste collection, transfer and transport, processing and final disposal. Waste management, especially in urban areas, is currently faced with quite complex problems. These problems include the high rate of waste generation, public awareness (human behavior) which is still very low and problems in final disposal activities which always cause problems of their own (Alfiandra, [15]).

One of the reasons why there should be a 3R Waste Disposal Site program is because waste management no longer relies on waste collection, transportation, and disposal activities, but starts from the household scale which is expected to implement minimization efforts, namely by reducing, reusing, and recycling. recycle waste generated through organic and inorganic waste sorting activities, processing organic waste into compost and recycling waste into useful materials. This is in accordance with the background of the implementation of the 3R Waste Disposal Site program in Sukabumi City, namely in the context of managing and reducing waste from the source so as to reduce the burden of the Final Processing Site which is increasingly limited in land, besides that to change the paradigm that waste that has been considered as useless and discarded goods becomes something that can be useful and become a source of income for the community.

The 3R Waste Disposal Site Program has been stated in the Sukabumi City Waste Management Master Plan document and is one of the performance targets of the Sukabumi City government in the Regional Medium-Term Development Plan as one of the waste reduction programs in the Sukabumi City area through policies and strategies for

managing household waste. household waste and household waste in Sukabumi City. The results of the assessment of the program background indicators show that all parameters are met and are included in the Good category, namely the program background in accordance with applicable laws and regulations related to waste management and 3R Waste Disposal Sites.

Legal basis

According to (Asshiddiqie, [16]) the legal basis or legal basis is the legal basis or legal ground, namely the legal norms that underlie certain legal actions or actions so that they can be considered legal or legally justified. The implementation of a good 3R Waste Disposal Site program cannot be separated from the existence of laws and regulations, technical instructions, and decrees as the legal basis for the implementation of the program. The implementation of the 3R Garbage Disposal Program in the context of reducing waste in Sukabumi City is based on Law Number 18 of 2008 concerning Waste Management, which is technically and operationally strengthened by Government Regulation Number 81 of 2012 concerning Management of Household Waste and Types of Household Waste. ; Presidential Regulation number 97 of 2017 concerning National Policies and Strategies for Household Waste Management and Kind of Household Waste; Sukabumi City Waste Management Master Plan; Regional Medium Term Development Plan of Sukabumi City; Mayor's Regulation number 29 of 2018 concerning Policies and Strategies for Management of Household Waste and Waste Similar to Household Waste in Sukabumi City and its amendments, namely Sukabumi Mayor Regulation number 14 of 2019; as well as a Decree on the Establishment of Non-Governmental Organizations as implementers of the 3R Waste Disposal Site program.

The results of the analysis of the legal basis indicators show that the program is implemented based on applicable laws and regulations so that it can be said that it has fulfilled the requirements to be implemented and is included in the Good category, namely programs based on legal regulations relevant to waste reduction and 3R Waste Disposal Sites.

Program Objectives

According to (Manullang [17]), people cannot carry out effective planning if they do not know the goals to be achieved by the planning. All planning is directed at achieving goals, therefore it would be surprising if planning would begin with a vague or confusing picture of the goals to be achieved. The objectives of the 3R Waste Disposal Site program are increase the commitment of local governments in the implementation of 3R Waste Disposal Sites

Evaluation of Program Inputs

Based on the results of the evaluation of the three indicators in this aspect, it is stated that the program inputs are included in the Enough category, as described below:

Infrastructure and processing facilities at the Waste Disposal Site3R

In accordance with the technical manual for the implementation of 3R Waste Disposal Sites published by the

Ministry of PUPR in 2019 that for the selection of processing facilities for 3R Disposal Sites, it is divided into three options, namely: 1) standard waste processing facilities consisting of a compost sieve, organic chopper, bamboo aerator /takakura stacking/hollow brick/composter drum/biodigester, standard waste processing facilities and improvement of stall waste processing consisting of compost sieve, organic chopper, bamboo aerator/takakura stacking/hollow brick/composter drum/biodigester and plastic press machine, standard waste processing facilities and improved processing of stall waste consisting of compost sieve, organic chopper, bamboo aerator/ takakura stacking/ brick hollow/ composter/ biodigester drums, plastic press machines and plastic chopping machines. The infrastructure and facilities provided by the Government at the beginning of the construction and operation of the 3R Waste Disposal Site are in accordance with the minimum standards, even in some 3R Waste Disposal Sites, the infrastructure and facilities owned meet option 2 (two), namely standard processing facilities and improvement of stall waste management, among others : Buildings, garbage motorbikes, garbage carts, organic chopping machines, sitting scales, digital scales and composters. The construction of buildings at each location is adjusted to the needs and the available land area, while the addition of facilities and infrastructure at several 3R Waste Disposal Sites such as biodigesters and sewing machines is provided according to need.

At the Mandiri and Cikondang Clean 3R Waste Disposal Sites, the infrastructure and facilities provided by the government at the beginning of development have changed and increased according to needs and are in good condition, this shows that the operations at the two 3R Waste Disposal Sites are running. Meanwhile at the Garbage Disposal

In other 3Rs, the condition of infrastructure and facilities tends not to improve even in damaged conditions. The availability of infrastructure and facilities at the 3R Waste Disposal Site affects the reduction of both organic and inorganic waste that enters the 3R Waste Disposal Site, so it is necessary to pay attention to its maintenance. Some 3R Waste Disposal Sites that are not active in operation tend not to carry out maintenance on the available infrastructure and facilities so that most of their conditions are damaged and cannot be repaired. Based on the description above, it can be concluded that the infrastructure and facilities of the 3R Waste Disposal Site provided by the government are very adequate to achieve the program objectives so that the input of infrastructure and facilities is categorized as Sufficient because the infrastructure and facilities available at the 3R Waste Disposal Site are option 2 which consists of a screener. compost, organic chopper, bamboo aerator/takakura stacking/hollow brick/drum composter/ biodigester and plastic press machine.

Human resources who manage the Waste Disposal Site3R

According to (Veithzal & Sagala [18]) human resources are people who are willing and able to contribute to the achievement of organizational goals. In addition, human resources are one of the input elements which together with other elements such as capital, materials, machines and

methods/technology are converted into management processes into outputs in the form of goods or services in an effort to achieve company goals. In accordance with the Technical Guidelines for the Implementation of 3R Waste Disposal Sites issued by the Ministry of Public Works and Public Housing, the human resources needed in the operational implementation of 3R Disposal Sites consist of managerial and technical personnel. Managerial staff are human resources listed in the management structure of the KPP and are not directly involved in the implementation of the 3R Garbage Disposal Site. The organizational structure of the KPP management in the 3R Garbage Disposal Site is at least does not consist of chairman, secretary, treasurer, economic business section, operation and maintenance section, and counseling section. This operation and maintenance section will operate and maintain waste management facilities and manage organic and inorganic waste. Meanwhile, technical personnel are human resources who are directly involved in the process of implementing 3R Waste Disposal Sites, such as machine operators, transport officers, sorting and composting officers.

In the Mandiri, Cemerlang and Cikondang Clean 3R Waste Disposal Sites, the existing resources are separated between managerial and technical so that each human resource can focus on their main tasks and functions. so that organizational goals can be achieved according to targets. Meanwhile, for the Tampo Mas 3R Waste Disposal Site, Amantul Ummah Sejati, Resik and Sindang Palay still have managerial human resources who double as technical human resources who are directly involved in the operation of the 3R Waste Disposal Site such as transportation, sorting, composting, and other waste recycling. relatively able to run well and able to make a significant reduction in waste. As for the 3R Waste Disposal Site, the managerial HR is no longer active and does not have technical personnel, the operation is no longer active and tends to be vacuumed without any activities.

Technical Human Resources greatly affect the sustainability of the 3R Waste Disposal Site because they are directly involved in the implementation of the 3R Waste Disposal Site, so from the input from the human resources who manage the human resources of the 3R Disposal Site in Sukabumi City, it can be categorized as Enough because most of them have managerial human resources who double as human resources. technical.

Operational and Maintenance Costs (BOP) of Waste Disposal Sites3R

According to (Rudianto [19]) operational costs are costs related to operations company excluding production costs. In general, operational costs are defined as costs incurred in relation to operations carried out by the company and are measured in units of money, where operational costs are often referred to as operational costs or business costs (Jusuf [20]). The financing of the 3R Waste Disposal Site is based on three incomes consisting of main and side income. The main income for 3R Waste Disposal Sites is dues and allocation of government funds, while side income is the result of selling waste and/or waste processing products, this

is as regulated in the Technical Guidelines for the Implementation of 3R Waste Disposal Sites issued by the Ministry of Public Works and Housing. People.

Operational costs are very much needed for the sustainability of the 3R Waste Disposal Site where these costs are used for electricity costs, fuel for waste transport vehicles, fuel for chopping machines, and employee salaries. The operational and maintenance costs of each 3R Disposal Site are different according to needs, the more active the 3R Disposal Site is, the more the operational and maintenance costs required are also large, this is directly proportional to the income obtained and the amount of waste that is processed. Some 3R Waste Disposal Sites still rely on assistance from the Environment Agency budget to meet monthly operational and maintenance costs, this is due to the lack of waste sorting processes and only rely on the sale of inorganic waste to stalls whose amount is not fixed every month, such as landfills. Garbage 3R Clean, Sindang Sari, Taman Asri and Sindang Palay. As for the Mandiri 3R Clean Waste Disposal Sites, Tampo Mas, Amanatul Ummah Sejati, Cemerlang and Cikondang, the operational and maintenance costs can be met from community contributions and proceeds from the sale of waste and/or waste processing products. Based on the results of the analysis above, it can be concluded that the input on operational and maintenance costs to meet the implementation of the 3R Waste Disposal Site can be categorized as Sufficient.

Evaluation of Program Process

Based on the research results, the process aspect of the program is included in the Enough category. This is the result of an assessment of three indicators, namely:

Utilization of available infrastructure and facilities at the 3R Garbage Disposal Site

In accordance with the Technical Guidelines for the Implementation of 3R Waste Disposal Sites issued by the Ministry of Public Works and Public Housing, that the maintenance of infrastructure and facilities for 3R Disposal Sites is very dependent on the willingness and ability of the community to operate, utilize, and maintain existing infrastructure and facilities. Managers of infrastructure and facilities must take the following steps to achieve successful management, including: conducting routine/periodic monitoring to determine and ensure the condition of infrastructure and facilities is running well, detect damage as early as possible so that a good maintenance and management plan can be drawn up, perform timely rehabilitation, evaluate service performance on a regular basis, perform management according to Standard Operating Procedure (SOP), inform the use of operational and maintenance funds in a transparent manner. The infrastructure and facilities provided by the government are in accordance with the standard technical manual for the implementation of 3R Waste Disposal Sites issued by the Ministry of PUPR in 2019 that for the selection of 3R Waste Disposal processing facilities and adjusted to the needs of each location.

The current infrastructure and facilities that are still available in each 3R Waste Disposal Site are mostly not

functioning properly or damaged, this is because they are not used and maintained properly by the manager and some are even missing or missing. This of course affects the waste management process at the 3R Waste Disposal Site and only inorganic waste sorting can be done at the 3R Waste Disposal Site. Based on the results of the analysis above, it can be concluded that the utilization of the infrastructure and facilities available at the 3R Waste Disposal Site is mostly not utilized optimally, so that the process of utilizing the infrastructure and facilities available at the 3R Disposal Site is categorized as Enough because only 50%-75% of infrastructure and facilities can be used properly.

Coaching to increase the capacity of human resources for the 3R Waste Disposal Site manager

In accordance with the Technical Guidelines for the Implementation of 3R Waste Disposal Sites issued by the Ministry of Public Works and Public Housing, that training is included in the community work plan (RKM) document both at the construction stage as well as the operational and maintenance stages. This training is given to workers at the construction stage and workers at the operational and maintenance stages. As for the guidance and assistance of the 3R Garbage Disposal Site, which is built is the responsibility of the Regional Government with the following descriptions: strengthening of KPP institutions; monitoring the continuity/sustainability of the operation and maintenance of facilities and infrastructure, the program for the implementation of the built 3R Garbage Disposal Site and guidance to the community/KPP in the management of facilities; provide input on obstacles that occur at the community level; as well as providing technical assistance to the community/CBOs related to technical matters such as periodic collection of residual waste, periodic inspection of the quality of compost products, and other technical analysis related to facility management.

Guidance and assistance is carried out by the facilitator and the Environment Agency from the planning, construction and operational stages of the 3R Waste Disposal Site to increase the capacity of human resources for the 3R Waste Disposal Site manager. The guidance is in the form of assistance to strengthen the institutional management of the 3R Waste Disposal Site as well as technical training in organic waste management and inorganic waste recycling. Some of the trainings provided and facilitated by the Environment Agency include: creative craft, recycle products, application making, cooking oil processing, composting and magot cultivation. The training is provided according to the needs and requests of the 3R Waste Disposal Site which is still actively operating. Special assistance is also provided by the Environment Agency to the management of KSM, RT and RW at the location of the inactive waste disposal site with the aim of re-activating the 3R waste disposal site.

In addition to coaching and training carried out by external parties in this case the Environmental Service, several 3R Waste Disposal Sites also routinely conduct internal coaching and training for each of their members both in managing organic and inorganic waste as well as in the use of waste facilities and infrastructure, as done by the KSM

management for the Mandiri Clean 3R Garbage Disposal Site, the Garbage Disposal Site 3R Tampo Mas, Amanatul Ummah Sejati 3R Garbage Disposal, Clean 3R Garbage Disposal, Brilliant 3R Garbage Disposal and Cikondang 3R Garbage Disposal. Guidance is very important for both the manager of the 3R Waste Disposal Site and the beneficiaries of the 3R Disposal Site for operational sustainability and achieving the objectives of the 3R Disposal Site program. Based on the results of the analysis, the process of coaching carried out to increase the capacity of human resources managing the 3R Waste Disposal Site is categorized as Good.

Funding mechanism in 3R Waste Disposal Site

In accordance with the Technical Guidelines for the Implementation of 3R Waste Disposal Sites issued by the Ministry of Public Works and Public Housing, the financing of 3R Waste Disposal Sites relies on three incomes consisting of main and side income. The main income for the 3R Waste Disposal Site is dues and allocation of government funds, while the secondary income is the sale of waste and/or waste processing products. Meanwhile, other sources of funds can be in the form of CSR (Corporate Social Responsibility) funds, the private sector and others that can be utilized for the operation and sustainability of the 3R Waste Disposal Site program. The funding mechanism for operational and maintenance costs in the operation of the 3R Waste Disposal Site in Sukabumi City comes from three sources, namely citizen contributions, government fund allocations and sales of waste/products resulting from waste processing. The largest funding comes from community contributions and the sale of inorganic waste to stalls, while the government's allocation of funds is only sufficient for electricity and fuel costs for waste transport vehicles.

The sources of financing from residents' waste fees are varied and not the same between the locations of the 3R Garbage Disposal Sites from one location to another in accordance with the agreement and the ability of residents to pay monthly contributions, as well as assistance from the Environmental Service which varies in amount according to the facilities and infrastructure. which exists at the 3R Waste Disposal Site, while from the sale of waste/products from waste processing the amount is not always the same every month depending on the amount of waste that enters and is processed at each 3R Waste Disposal Site. The amount of fund allocation assistance provided by the Environmental Service is still relatively low in supporting the operational sustainability of the 3R Waste Disposal Site, this is influenced by the financial capacity of the local government in allocating funds for waste management. as well as the commitment of the regional head in the policy of reducing and handling waste in Sukabumi City. Based on the results of the study, the process of the funding mechanism for operational costs (BOP) in the implementation of the 3R Waste Disposal Site is still categorized as Sufficient.

IV. CONCLUSION

Based on the results of the research evaluation of the reduce, reuse, recycle waste management program (Trash

Disposal Site 3R) in the context of reducing waste in Sukabumi City, the following conclusions can be drawn Evaluation of the context (context) is good, because it meets the criteria for conformity with the program background with applicable laws and regulations related to waste management and 3R waste disposal sites, there is a legal basis that is relevant to waste reduction and 3R waste disposal sites in program implementation, as well as the program objectives as expected, namely to reduce waste from the source by involving community participation. Evaluation of input (input) is considered sufficient, because the infrastructure and facilities available at the 3R Waste Disposal Site are included in option 2 which consists of standard waste processing facilities and increased processing of stall waste consisting of compost sieves, organic choppers, bamboo/takakura aerators stacking/hollow brick/drum composter/biodigester and plastic press machine. In most of the 3R Waste Disposal Sites, the human resources (HR) who manage the 3R Disposal Sites still double as managerial human resources and technical human resources, and maintenance costs are still not met even though the operational costs in the implementation of the 3R waste disposal sites have been met, so it will affect in the operation of the 3R Waste Disposal Site. Evaluation of the process is considered sufficient, because in most of the 3R waste disposal sites, the utilization of infrastructure and facilities is only around 50% - 70% of the available, the main and secondary sources of funding still come from community contributions, government fund allocations and proceeds. sales of waste and/or waste processing products, although the guidance carried out by internal and external parties to increase the capacity of human resources managing the 3R Waste Disposal Site has been categorized as good, namely more than three times a year. Product evaluation is considered sufficient, due to accountability in The management of the 3R Waste Disposal Site is still in the sufficient category, namely the financial statements are not presented properly and neatly so that training in basic bookkeeping concepts in financial reporting is still needed, the percentage of waste reduction from the entire 3R Waste Disposal Site has met the city-scale target of 22% in 2015. 2019 and 36% in 2020, but optimization is still needed in the operation of the 3R Waste Disposal Site so that the city-scale waste reduction target according to Jakstrada can be achieved, the products produced from the 3R Disposal Site are very varied and able to provide side income for the sustainability of the Waste Disposal Site. 3R. The results of the evaluation study of the reduce, reuse, recycle (3R Waste Disposal) program in the context of reducing waste in the City of Sukabumi are considered sufficient, for that it is still necessary to optimize the input and process aspects so that product aspects can be produced as desired.

REFERENSI

- [1] Widiyono, W. Natural resources management to deliver Sustainable Development Goals (SDGs).

- Indonesian Journal of Applied Environmental Studies*, 1 (2): 55-63. 2020.
- [2] Indonesia, P. R. *Undang-Undang Republik Indonesia nomor 18 tahun 2008 tentang pengelolaan sampah*. Sekretariat Negara, Jakarta. 2008.
- [3] Ni Komang Ayu Artiningsih. *Peran Serta Masyarakat dalam Pengelolaan Sampah Rumah Tangga* (Studi kasus di Sampangan dan Jomblang, Kota Semarang). Semarang: Tesis, UNDIP. 2008.
- [4] Karden Edy Sontang Manik. *Pengelolaan Lingkungan Hidup*. Jakarta: Djambatan. 2007.
- [5] Peraturan Wali Kota Sukabumi Nomor 29 Tahun 2018. *Kebijakan dan Strategi Nasional Pengelolaan Sampah Rumah Tangga dan sampah Sejenis Sampah Rumah Tangga Di Kota Sukabumi*. 2018
- [6] Hartoyo sri, *petunjuk teknis TPS 3R tempat pengolahan sampah 3R*. Jakarta. Cipta Karya. 2017.
- [7] Iskandar, A. *Daur Ulang Sampah*, Jakarta: Azka Mulia Media. 2006.
- [8] Seruyaningtyas, K., dkk. *Perencanaan Sistem Pengelolaan Sampah Terpadu Studi Kasus Kelurahan Gedawang Kecamatan Banyumanik, Kota Semarang*. *Jurnal Teknik Lingkungan*. 2017.
- [9] Samadikun, B. P. dkk. *Revitalisasi Pengelolaan Bank Sampah di Palabuhan ratu*. *Jurnal Presipitasi : Media Komunikasi dan Pengembangan Teknik Lingkungan*. 2017.
- [10] Ni Komang Ayu Artiningsih. *Peran Serta Masyarakat dalam Pengelolaan Sampah Rumah Tangga* (Studi kasus di Sampangan dan Jomblang, Kota Semarang). Semarang: Tesis, UNDIP. 2008.
- [11] Kuncoro, Sejati. *Pengolahan Sampah Terpadu*. Yogyakarta: Kanisius. 2009.
- [12] Mardalis., *Metode Penelitian Suatu Pendekatan Proposal*. Jakarta : Bumi Aksara. 2008
- [13] Pramesti, T.R., Retnowati, R., Priatna, D.. An evaluation of a community-based forest restoration programme in Gunung Gede Pangrango National Park, West Java, Indonesia. *Indonesian Journal of Applied Environmental Studies*, 1 (2): 25-33. 2020
- [14] Kartikawan, Y. *Pengelolaan Persampahan*. *Jurnal Lingkungan Hidup*. Yogyakarta. 2007.
- [15] Alfiandra, A. *Kajian Partisipasi Masyarakat Yang Melakukan Pengelolaan Persampahan 3r Di Kelurahan Ngaliyan Dan Kalipancur Kota Semarang*. 2009.
- [16] Asshiddiqie, J. *Pengantar ilmu hukum tata negara*. 2006.
- [17] Manullang, M. *Dasar-Dasar Manajemen*. Yogyakarta: Gajah Mada Univ. Press. 2005.
- [18] Veithzal, R., & Sagala, E. J. *Manajemen sumber daya manusia untuk perusahaan*. Jakarta: PT Raja Grafindo Persada. 2004.
- [19] Rudianto, E. *Akuntansi Manajemen Informasi Untuk Pengambilan Keputusan Strategis*. Jakarta: Erlangga. 2013.
- [20] Jusuf, J. *Analisis kredit*. Penerbit ANDI. Yogyakarta. 2008.