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THE ROLE OF THE TPS3R SADU KENCANA GROUP IN REALIZING SUSTAINABLE WASTE MANAGEMENT IN DAUH PEKEN VILLAGE, TABANAN, BALI

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Abstract

ABSTRACT

Waste management is a crucial issue faced by many villages in Indonesia, including Dauh Peken Village in Tabanan, Bali. This study aims to analyze the role of the TPS3R (Reduce, Reuse, Recycle Waste Processing Place) Sadu Kencana Group in realizing sustainable waste management in Dauh Peken Village. Using a qualitative descriptive approach, this study examines the history, operations, innovation, and socio-economic and environmental impacts of the existence of TPS3R Sadu Kencana. The results of the study show that TPS3R Sadu Kencana plays a central role not only as a waste processing facility, but also as an agent of change in community behavior. Established in 2015 and optimized in 2022 with the support of BRI CSR, this group has successfully served 600 customers, including hospitals and schools. Innovations such as a cashless payment system and compost production (300 kg per quarter) sold to farmers show the success of the economic aspect. The group actively educates residents to switch from the habit of "transport-throwing" to sorting and processing waste from the source. Despite the challenges in terms of community awareness and service coverage that has only reached a small fraction of

4,046 families, TPS3R Sadu Kencana is proving to be an inspiring and sustainable community-based waste management model.

Keywords: TPS3R, Sustainable Waste Management, Community-Based Waste Management, Dauh Peken Village, 3R

A. INTRODUCTION

The waste problem has become an urgent national issue to find a solution. The volume of waste that continues to increase, especially from households, is inversely proportional to the carrying capacity of the environment, especially the Final Processing Site (TPA). In Bali, for example, the Mandung Landfill in Tabanan is experiencing a critical overload condition, so it requires a waste management solution from upstream, namely from the source in accordance with Law Number 18 of 2008 concerning Waste Management.

In accordance with Law Number 23 of 2014 concerning Regional Government, Dauh Peken Village, located in Tabanan District, Tabanan Regency, Bali, also felt the impact of this crisis. Prior to the existence of structured management initiatives, the village faced the problem of bad habits of people who littered garbage, resulting in a dirty village scenery. Realizing this, the Dauh Peken Village Government is trying to find a long-term solution that not only focuses on final disposal, but also on reducing waste from households. This is in line with the government's priority programs, as stated in Asta Cita, which emphasizes the importance of living in harmony with the environment as stipulated in Law Number 32 of 2009 concerning Environmental Protection and Management. .

One of the answers to this problem is the establishment of the Sadu Kencana Reduce, Reuse, Recycle (TPS3R) Waste Treatment Plant. Established in 2015, this facility initially did not function optimally and became more of an ordinary garbage dump. However, since 2022, TPS3R Sadu Kencana has been optimized again, especially after receiving support from the BRI Peduli Corporate Social Responsibility (CSR) program. This optimization marks a new chapter in waste management in Dauh Peken Village, where waste is no longer only transported and disposed of, but processed into resources with economic value. The TPS3R Sadu Kencana group then became the driving force in realizing the vision of a green, clean, and healthy village through independent

and sustainable waste management as stated in the Regulation of the Minister of Public Works Number 3 of 2013 concerning the Implementation of Waste Infrastructure and Facilities.

There are a number of crucial issues behind the importance of a deeper study of the role of this group, including:

1. Significant gap between service capacity and total village waste load. Until 2025, TPS3R Sadu Kencana will only be able to serve 600 customers. This number is very unequal when compared to the total number of families in Dauh Peken Village which reached 4,046 families. This data indicates that there are still thousands of households whose waste management mechanisms have not been integrated with the sustainable system offered by TPS3R. The low coverage of this service is suspected to be strongly correlated with old unsettling practices, such as littering in the village environment which had made the village look dirty.
2. Challenges in the transformation of institutional functions and capacities. At the beginning of its establishment in 2015, TPS3R Sadu Kencana did not function optimally and only operated as an ordinary waste disposal site, even though it was technically capable of 3R (Reduce, Reuse, Recycle) processing. This shows that there are problems in early management that hinder the realization of the concept of sustainability. It was only in 2022, after receiving assistance from BRI's Social and Environmental Responsibility (TJSL) program, that TPS3R began to be re-optimized with additional assets such as pickups, garbage bags, and composter tubs, which allowed it to transport waste from homes and produce compost more effectively. The process of transformation from a landfill to a productive processing site is a central issue that needs to be analyzed.
3. Problems in the efficiency of operational and financial management. Before 2022, TPS3R Sadu Kencana managers experienced difficulties in withdrawing monthly dues from customers in cash. This is a classic obstacle in the financial sustainability of a waste management unit. In response, TPS3R Sadu Kencana innovated by implementing a non-cash payment system (QRIS and bank transfer) in 2022. This innovation aims to increase transparency, make it easier to withdraw contributions (IDR 30,000 per month), and

prepare more accountable financial statements. However, the effectiveness of this new system in ensuring stable cash flow for long-term operations still needs further study.

Thus, the background of the problem in this study rests on the irony between the noble goal of establishing TPS3R Sadu Kencana to realize sustainable waste management in Dauh Peken Village, and the reality on the ground that is still faced with various challenges. These challenges include low service coverage, a history of institutional operational ups and downs, as well as adaptation efforts through payment system innovation. Therefore, research on the role of the TPS3R Sadu Kencana Group is very crucial to be carried out. This research is expected to identify in depth how this group carries out its role, overcoming obstacles, and the extent of its contribution in encouraging changes in community behavior towards sustainable waste management in Dauh Peken Village.

From the various definitions above, it can be concluded that in general supervision is a systematic process to ensure the conformity between the implementation of work and the plan, standard, or objectives that have been set. This process includes not only monitoring and checking, but also evaluation, correction, and preventive actions to achieve effectiveness, efficiency, and accountability in an organization.

B. LITERATURE REVIEW

1. Concept of Sustainable Waste Management

Sustainable waste management is a holistic approach that focuses not only on final disposal, but also on efforts to reduce waste from the source. This concept integrates environmental, social, and economic aspects to ensure that today's waste management does not compromise the ability of future generations to meet their needs. This is in line with the Sustainable Development Goals (SDGs), specifically goal 11 on Sustainable Cities and Settlements and goal 12 on Responsible Consumption and Production.

2. Prinsip 3R (Reduce, Reuse, Recycle)

The 3R principle is the main foundation in modern waste management, especially at the source level. The goal is to minimize waste generation and maximize the use value of each item.

- a. Reduce: Efforts to reduce the use of items that have the potential to become waste, such

as single-use plastic bags and packaging that is not environmentally friendly.

- b. Reuse: Reuse items that are still suitable for the same or different functions, without going through a recycling process.
- c. Recycle: Processing waste, especially inorganic waste such as plastic, paper, and metal, into new products with value

3. TPS3R (reduce, reuse, recycle waste treatment site)

TPS3R is a waste treatment plant concept that prioritizes the 3R principle at the regional level, such as villages or sub-districts. TPS3R is designed to process waste in an integrated manner, including waste sorting, processing, and utilization activities. The main goal is to reduce the volume of waste that must be transported to landfills, while creating added value from waste, for example through the production of compost from organic waste or the sale of recycled materials from inorganic waste. TPS3R also functions as an education and empowerment center for the community to care more about the environment.

4. Community-Based Waste Management

A community-based approach puts the community as the main subject in waste management. The success of this program is highly dependent on the active participation of all elements of society, including village officials, community leaders, youth groups (such as youth organizations), and PKK women. In this model, the government or external parties play the role of facilitators and supporters, while community groups, such as the Independent Waste Management Group (KPSM) or TPS3R managers, become the driving force in the field. Collaboration and synergy between stakeholders are the main keys to the sustainability of the program

C. METHOD

This study uses a qualitative descriptive approach with a case study method. The case study was chosen to gain an in-depth and contextual understanding of the role of the Sadu Kencana TPS3R Group in Dauh Peken Village. The steps taken in writing this study are as follows: first, the author collects data as information related to the title of the study; second, developing the data obtained through the identification of information sources generated from the previous stage; Third, analyze the data.

D. EXPLANATION

Profile of TPS3R Sedu Kencana

TPS3R Sadu Kencana is located in Dauh Peken Village, Tabanan, Bali. This facility was built in 2015 using the Special Allocation Fund (DAK) with the aim that Dauh Peken Village is able to be independent in managing its waste. However, in the early days, this TPS3R was not functioning optimally and tended to only be a garbage dump.

In 2022, TPS3R Sadu Kencana received a new energy injection through the Social and Environmental Responsibility (TJSL) or CSR program from BRI Peduli. The assistance provided was in the form of one unit of pickup to transport garbage, three units of composter tubs, 1,800 pieces of garbage bags, and renovation of the manager's office. This assistance is a turning point that allows managers to optimize the function of TPS3R to the maximum. Currently, TPS3R Sadu Kencana is chaired by Ni Putu Suarlin and accompanied by Andriana, with six workers in charge of transporting, sorting, and processing waste.

The Role of the TPS3R Sadu Kencana Group

Based on the results of the research, the TPS3R Sadu Kencana Group carries out several strategic roles:

- a. **As a Waste Processor:** The group's main role is to process the waste of 600 customers, which includes households, two hospitals, and four schools in Dauh Peken Village. Organic waste, such as leftover canang, leaves, vegetables, and food scraps, is processed into compost and is also used for maggot cultivation. Meanwhile, inorganic waste is sorted to be recycled or sold through waste banks.
- b. **As the Implementer of the 3R Principle:** This group consistently applies the 3R principle. They educate residents to *reduce* (reduce waste), sort so that waste can *be reused* and recycled. The compost produced from the recycling of organic waste is a real example of the application of *the principle of recycle*. By processing waste at the source, they significantly reduce the volume of waste that must be disposed of at the Mandang landfill.
- c. **As an Agent of Education and Behavior Change:** One of the most important roles of TPS3R Sadu Kencana is to change the old habits of the community that only do "transport-throwaway". Active managers provide an understanding that sorting waste is a shared

responsibility to save the earth. They also provide education to schools about the importance of the 3Rs for nature conservation. This effort is slowly bearing fruit with the beginning to change the habits of residents who used to often throw garbage carelessly.

- d. **As a Circular Economy Driver:** TPS3R Sadu Kencana proves that waste has economic value. They produce 300 kilograms of compost in three months, which are sold at a price of Rp 2,000 per kilogram or Rp 5,000 per three kilograms to farmers and customers. In addition, inorganic waste that has been sorted can be resold, providing additional income for managers and communities involved in waste banks

Innovation and Program Impact

Innovation is the key to the success of TPS3R Sadu Kencana. One of the exemplary innovations is the implementation of a non-cash waste contribution payment system through bank transfers and QRIS since 2022. This innovation simplifies transactions for 600 customers and improves the efficiency of the group's financial management.

The impact of this program includes:

- a. **Environmental Impact:** Reduced volume of waste transported to landfills, cleaner village environments, and reduced litter disposal practices.
- b. **Social Impact:** Increasing public awareness of the importance of waste management, job creation for six workers, and strengthening of mutual cooperation and concern for the environment.
- c. **Economic Impact:** Income from the sale of compost and inorganic waste recycling. More transparent and efficient financial management thanks to a cashless payment system.

Picture of Dauh Peken waste management site



Source from: Kamtor TPS3R Dauh Peken Manager

Sustainability Challenges and Efforts

Despite having made a lot of progress, TPS3R Sadu Kencana still faces significant challenges. Their service coverage only covers 600 customers, while the total number of families in Dauh Peken Village reaches 4,046. This means that there are still many residents who have not been served or are not yet aware to join.

The biggest challenge is to change the mindset and habits of people who have long been accustomed to the "transport-throwaway" system. Low awareness to sort waste from home is still the main obstacle. The Chairman of TPS3R, Ni Putu Suarlin, emphasized that it is important to continue to provide an understanding that managing waste is an effort to save the earth, not just looking for profit.

The Village Superintendent of Dauh Peken, I Komang Sanayasa, realizes that this is a "small step" to care for the environment and continues to strive to build community awareness. Continuous support from the village government, the private sector such as BRI, and active community participation are the main keys to overcoming these challenges and ensuring the sustainability of the program.

E. CONCLUSION

Based on the results and discussion, it can be concluded that the Sadu Kencana TPS3R Group plays a very vital and multidimensional role in realizing sustainable waste management in

Dauh Peken Village. These roles include technical functions as waste processors, educational functions as agents of behavior change, and economic functions as drivers of the circular economy through compost production and recycling.

With the support of BRI Peduli CSR, TPS3R Sadu Kencana has successfully transformed from a simple landfill into a modern waste processing center that serves hundreds of customers, including educational and health institutions. Innovations such as non-cash contribution payments show management professionalism. The positive impact is clearly seen from a cleaner village environment, increased public awareness, and the birth of economic value from waste.

However, the journey towards truly comprehensive waste management is still long. The main challenges faced are the coverage of services that have not reached all residents and the low awareness of sorting waste from some communities. For this reason, sustainable synergy is needed between the village government, TPS3R managers, the private sector, and all elements of society. Dauh Peken Village and TPS3R Sadu Kencana have proven that with commitment and collaboration, the waste problem can be turned into an opportunity to realize a clean, healthy, and sustainable village.

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