

# The Role of the TPS3R Sadu Kencana Group in Achieving Sustainable Waste Management in Dauh Peken Village, Tabanan, Bali

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## 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 Site) Sadu Kencana Group in realizing sustainable waste management in Dauh Peken Village. Using a qualitative descriptive approach, this study examines the history, operations, innovations, and socio-economic and environmental impacts of TPS3R Sadu Kencana. The results indicate that TPS3R Sadu Kencana plays a central role not only as a waste processing facility but also as an agent of community behavior change. Established in 2015 and optimized in 2022 with support from BRI's CSR program, the group has successfully served 600 customers, including hospitals and schools. Innovations such as a non-cash payment system and compost production (300 kg per three months) sold to farmers demonstrate economic success. The group actively educates residents to shift from the "haul-and-bury" habit towards waste sorting and processing at the source. Despite facing challenges in public awareness and service coverage that only reaches a small portion of the 4,046 families, TPS3R Sadu Kencana proves to be an inspirational and sustainable community-based waste management model.

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

## 1. Introduction

Waste problems have become an urgent national issue that requires solutions. The continuously increasing volume of waste, especially from households, is inversely proportional to the carrying capacity of the environment, particularly Final Processing Sites (TPA). In Bali, for example, the Mandung TPA in Tabanan is experiencing critical overload, thus requiring waste management solutions from the upstream, i.e., 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 feels the impact of this crisis. Before structured management initiatives existed, the village faced the problem of bad habits of the community who littered, resulting in a dirty village view. Realizing this, the Dauh Peken Village Government sought long-term solutions that focus not only on final disposal but also on waste reduction starting from households. This aligns with government priority programs, such as those stated in Asta Cita, which emphasize the importance of a harmonious life with the environment as stipulated in Law Number 32 of 2009 concerning Environmental Protection and Management..

One solution to these problems is the establishment of the Reduce, Reuse, Recycle Waste Processing Site (TPS3R) Sadu Kencana. Established in 2015, this facility initially did not function optimally and was more of a regular dumping ground. However, since 2022, TPS3R Sadu Kencana has been re-optimized, especially after receiving support from the BRI Peduli Corporate Social Responsibility (CSR) program. This optimization marked a new chapter in waste management in Dauh Peken Village, where waste is no longer just transported and disposed of but is processed into resources with economic value. The TPS3R Sadu Kencana Group then became the driving force in realizing the village's vision of a green, clean, and healthy village through independent and sustainable waste management as stipulated in Minister of Public Works Regulation Number 3 of 2013 concerning the Provision of Waste Management Infrastructure and Facilities.

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

1. The significant gap between service capacity and the total village waste burden. As of 2025, TPS3R Sadu Kencana has only been able to serve 600 customers. This number is very disproportionate compared to the total number of families in Dauh Peken Village, which reaches 4,046 households. This data indicates that there are still thousands of households whose waste management mechanisms are not integrated with the sustainable system offered by TPS3R. This low service coverage is strongly suspected to be correlated with old, troubling practices, such as littering in the village environment, which once made the village look dirty.
2. Challenges in the transformation of function and institutional capacity. At its inception in 2015, TPS3R Sadu Kencana did not function optimally and only operated as a regular dumping ground, although technically it was already capable of 3R (Reduce, Reuse, Recycle) processing. This indicates problems in early management that hindered the realization of a sustainable concept. Only in 2022, after receiving assistance from the BRI Corporate Social and Environmental Responsibility (TJSL) program, this TPS3R began to be re-optimized with additional assets such as a pickup truck, garbage bags, and composter bins, enabling it to transport waste from homes and produce compost more effectively. The transformation process from a dumping ground to a productive processing facility is a central issue that needs to be analyzed.

Problems in the efficiency of operational and financial management. Before 2022, the management of TPS3R Sadu Kencana had difficulty collecting monthly fees from customers in cash. This was a classic obstacle to 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, facilitate fee collection (IDR 30,000 per month), and prepare more accountable financial reports. However, the effectiveness of this new system in ensuring stable cash flow for long-term operations still requires further study.

Thus, the background of the problems in this study rests on the irony between the noble goal of establishing TPS3R Sadu Kencana to achieve sustainable waste management in Dauh Peken Village and the reality on the ground which still faces various challenges. These challenges include low service coverage, the up-and-down history of institutional operations, and adaptation efforts through payment system innovations. Therefore, research on the role of the TPS3R Sadu Kencana Group is crucial to carry out. This research is expected to identify in depth how this group carries out its role, overcomes obstacles, and to what extent its contribution in encouraging community behavior change towards sustainable waste management in Dauh Peken Village.

#### Supervision Theory

1. Mulyani (2010): Supervision is all activities to ensure and guarantee that tasks or work have been carried out according to established plans, outlined policies, and applicable orders or regulations.
2. Ismail, Abiddin, & Ahmad (2010): In the academic context, supervision is defined as an intensive and interpersonal relationship designed to facilitate a person's development.
3. Terry (2011): Supervision includes activities to compare actual performance with predetermined standards.
4. Manullang (2012): Supervision is a process of determining what work has been done, assessing it, and correcting if necessary so that work implementation aligns with the original plan.
5. Fahmi (2015): Supervision can be defined as a way for an organization to achieve effective and efficient performance and support the realization of the organization's vision and mission.
6. Daft (2016): If deviations are found, supervision functions to take corrective action. This is very important in efforts to maintain quality and performance standards.
7. Weber (2018): Supervision plays a role in maintaining institutional stability through the application of consistent standards, supporting transparency through appropriate reporting, and ensuring public accountability.

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

## 2. Literature Review

### 1. Concept of Sustainable Waste Management

Sustainable waste management is a holistic approach that does not only focus on final disposal but also on waste reduction efforts from the source. This concept integrates environmental, social, and economic aspects to ensure that current waste management does not compromise the ability of future generations to meet their needs. This aligns with the Sustainable Development Goals (SDGs), particularly goal 11 on Sustainable Cities and Communities and goal 12 on Responsible Consumption and Production.

### 2. The 3R Principle (Reduce, Reuse, Recycle)

The 3R principle is the main foundation of modern waste management, especially at the source level. Its goal is to minimize waste generation and maximize the utility 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 non-environmentally friendly packaging.
- b. Reuse: Reusing items that are still usable for the same or different functions, without going through a recycling process.
- c. Recycle: Processing waste, especially inorganic waste such as plastic, paper, and metals, into new useful products.

### 3. TPS3R (Reduce, Reuse, Recycle Waste Processing Site)

TPS3R is a concept of a waste processing site that prioritizes the 3R principle at the regional level, such as a village or sub-district. TPS3R is designed to process waste in an integrated manner, including sorting, processing, and utilization of waste. Its main objectives are to reduce the volume of waste that must be transported to the TPA, 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 community empowerment center to care more about the environment.

### 4. Community-Based Waste Management

The community-based approach places the community as the main subject in waste management. The success of this program heavily depends on the active participation of all community elements, including village officials, community leaders, youth groups (such as Karang Taruna), and PKK women's groups. In this model, the government or external parties act as facilitators and supporters, while community groups, such as Independent Waste Management Groups (KPSM) or TPS3R managers, become the driving force on the ground. Collaboration and synergy among stakeholders are key to program sustainability.

## 3. Methodology

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 TPS3R Sadu Kencana 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 research title; second, develops the data obtained through identifying information sources resulting from the previous stage; third, analyzes the data.

## 4. Results And Discussion

### 4.1 Profile of TPS3R Sadu 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 would be able to manage its waste independently. However, in the early days, this TPS3R did not function optimally and tended to be just a dumping ground.

In 2022, TPS3R Sadu Kencana received a new energy boost through the Corporate Social and Environmental Responsibility (TJSL) or CSR program from BRI Peduli. The assistance provided included one pickup truck unit for transporting waste, three composter bin units, 1,800 garbage bags, and renovation of the management office. This assistance became a turning point that allowed the management to optimize the function of TPS3R to the fullest. Currently, TPS3R Sadu Kencana is chaired by Ni Putu Suarlin and accompanied by Andriana, with six workers tasked with transporting, sorting, and processing waste.

**The Role of the TPS3R Sadu Kencana Group**

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

- a. **As Waste Processors:** The main role of this group is to process waste from 600 customers, which includes households, two hospitals, and four schools in Dauh Peken Village. Organic waste, such as leftover canang (offerings), leaves, vegetables, and food scraps, is processed into compost and also used for maggot cultivation. Meanwhile, inorganic waste is sorted for recycling or sale through the waste bank.
- b. **As Implementers of the 3R Principle:** This group consistently applies the 3R principle. They educate residents to reduce waste, sort waste so it can be reused and recycled. The compost produced from recycling organic waste is a concrete example of applying the recycle principle. By processing waste at the source, they significantly reduce the volume of waste that must be sent to the Mandung TPA.
- c. **As Agents of Education and Behavior Change:** One of the most important roles of TPS3R Sadu Kencana is changing the old habit of the community which only did "haul-and-dump". The management actively provides understanding that sorting waste is a shared responsibility to save the earth. They also provide education to schools about the importance of 3R for environmental sustainability. These efforts are slowly showing results with the changing habits of residents who used to often litter..
- d. **As Drivers of the Circular Economy:** TPS3R Sadu Kencana proves that waste has economic value. They produce 300 kilograms of compost in three months, which is sold at IDR 2,000 per kilogram or IDR 5,000 per three kilograms to farmers and customers. In addition, sorted inorganic waste can be resold, providing additional income for the management and the community involved in the waste bank.

**TPS3R Sadu Kencana Management Data Table 2023–2025**

NOMOR	Activity 2023 and 2024	Activity on 2025
1	<ol style="list-style-type: none"> <li>1. Establishment &amp; Operation: TPS3R was established in 2023 and is managed by volunteers and the local community.</li> <li>2. Waste Volume: An average of 900 kilograms of waste is collected and processed daily.</li> <li>3. Service Coverage: Covers approximately 530 customers, equivalent to 600 families (KK) in the Dauh Peken Village area.</li> <li>4. Workforce: Supported by six operational staff.</li> </ol>	<ol style="list-style-type: none"> <li>1. Intensify waste sorting education programs for the community and participate in waste management outreach programs to improve the performance of the TPS3R groups.</li> <li>2. Challenge: Addressing the previous problem of irregular waste disposal.</li> </ol>

Source from: Singasana.Balipost.com

**4.2 Innovation and Program Impact**

Innovation is the key to the success of TPS3R Sadu Kencana. One noteworthy innovation is the implementation of a non-cash waste fee payment system via bank transfer and QRIS since 2022. This innovation facilitates transactions for 600 customers and increases the efficiency of the group's financial management..

The impacts of this program include:

- a. Environmental Impact: Reduction in the volume of waste transported to the TPA, a cleaner village environment, and a reduction in littering practices..
- b. Social Impact: Increased public awareness of the importance of waste management, creation of jobs for six workers, and strengthened mutual cooperation and environmental concern.
- c. Economic Impact: Income from the sale of compost and recycled inorganic waste. More transparent and efficient financial management thanks to the non-cash payment system.

Pictures of Dauh Peken Waste Processing Site



Source: TPS3R Dauh Peken Management Office

#### 4.3 Challenges and Sustainability Efforts

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

The biggest challenge is changing the mindset and habits of the community, which have long been accustomed to the "haul-and-dump" system. Low awareness of sorting waste from home remains a major obstacle. The Chairperson of TPS3R, Ni Putu Suarlin, emphasized the importance of continuously providing understanding that managing waste is an effort to save the earth, not just seeking profit.

The Head of Dauh Peken Village, I Komang Sanayasa, acknowledged that this is a "small step" towards caring for the environment and continues to strive to build public awareness. Continuous support from the village government, private parties such as BRI, and active community participation are key to overcoming these challenges and ensuring program sustainability.

### 5. Conclusion

Based on the results and discussion, it can be concluded that the TPS3R Sadu Kencana 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 support from BRI Peduli CSR, TPS3R Sadu Kencana successfully transformed from a simple dumping ground into a modern waste processing center serving hundreds of customers, including educational and health institutions. Innovations such as non-cash fee payments demonstrate management professionalism. The positive impacts are clearly visible from a cleaner village environment, increased public awareness, and the generation of economic value from waste.

However, the journey towards truly comprehensive waste management is still long. The main challenges faced are service coverage that has not yet reached all residents and low awareness of waste sorting among some community members. Therefore, continuous synergy between the village government, TPS3R management, the private sector, and all elements of society is needed. Dauh Peken Village and TPS3R Sadu Kencana have proven that with commitment and collaboration, waste problems can be turned into opportunities to create a clean, healthy, and sustainable village.

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