

Community Perception on Waste Management with the 3R Method and Its Impact on Health Quality at TPS Bumi Asri Selemadeg Village: A Qualitative Study

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Abstract: The Bali islands have problems with high waste production. As an effort to accelerate the handling of this waste, the Tabanan Regency government has involved all sectors including the government at the village level by establishing a waste processing site (TPS) in Selemadeg Village. However, not all people have utilized this TPS optimally. This study intended to further explore this community's perception of the TPS and its impact on health quality. This study used a qualitative design with an exploratory approach. Data were collected through in-depth interviews with 10 related informants, analyzed thematically, and presented in narrative form. This study found that all informants had the perception that waste was a very serious problem and must be managed properly. This waste problem has a negative impact on environmental health, which can directly reduce individuals' and rural communities' health quality. The role of the community as the main waste producer is integral to waste management, otherwise known as the 3R (reuse, reduce and recycle). Most of the informants strongly supported the existence of the TPS as a place for waste processing. All informants in this study understood that the waste problem must be handled seriously because poorly managed waste can cause health problems, both in environmental health and individual and community health. This study strongly supports the TPS as a place for waste management, especially with the 3R method. The community has felt the positive benefits of this TPS. The government is suggested to continue to facilitate the management of the TPS to be more optimal.


1 INTRODUCTION

Bali is one of the islands that has a problem with high waste production. In addition to the population density and the use of tools and materials that are at risk of producing waste, waste in Bali also comes from the remains of traditional ceremonies that use leaves, flowers, and fruit a lot. The composition of waste in Bali shows a ratio of 70% organic waste and 30% inorganic waste. Most of the waste generated at the household level amounts to 8,300 m³ per day. The city district with the highest level of waste production is Denpasar City with a total waste production of 4,620.3 m³ per day or 39.9% of the total waste generated on the island of Bali. A further problem is that 30% of the inorganic waste consists of residual

building materials, paper, textiles, glass, metal, plastic/rubber, and others that take years to decompose, thus causing environmental pollution (Gubernur Bali, 2018).

The central government and local governments have not remained silent in an effort to overcome this waste problem. Various efforts have been made such as issuing several regulations and policies related to environmental health. Important regulations issued by the central government are Law Number 32 of 2009 on environmental protection and management and Government Regulation number 66 of 2014 concerning environmental health, which further discusses environmental management including waste (Lembaga Negara RI, 2014) and (Presiden RI, 2009). Several other regulations related to

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environmental health are Regional Regulation Number 1 of 2017 concerning environmental protection and management and Regional Regulation Number 5 of 2011 concerning waste management. This regulates efforts to manage waste as optimally as possible to protect the environment from pollution (Gubernur Bali, 2011) and (Gubernur Bali, 2017). Governor of Bali Regulation Number 16 of 2016 concerns environmental quality standards and standard criteria for environmental damage. In general, the contents of this regulation supports all waste management efforts to create a clean and healthy environment (Gubernur Bali, 2016).

It turns out that this waste problem was not only experienced by the city of Denpasar as one of the big cities in Bali. This was also experienced by all districts in Bali, especially in the city of Tabanan. To address this, the Tabanan city government issued Regent's regulation number 12 of 2020 concerning household waste processing. As an effort to accelerate the handling of this waste, the Tabanan Regency government involved all sectors, including the government at the village level (Peraturan Bupati (PERBUP), 2020). One of the participating villages is Selemadeg Village. In this village, there is already a waste processing site (TPS), namely TPS Bumi Asri. This location was selected as the place of research because it is one of the waste processing sites that actively processes both organic and inorganic waste, but the obstacle encountered in the field were that not all people used this TPS to manage the waste they produced. There were still some people who processed their own waste by throwing it in the garden, burning it, or hoarding it in the vacant land behind their house. In fact, if processed, this waste can still be reused, reduced, and recycled (3R) and can be of economic value. In addition, improper waste management can potentially affect the area's quality of health. This is the reason why this study dove into the public's perception of waste processing at TPS Bumi Asri and its impact on the quality of public health in the village. The purpose of this study was to find out more about the public's perception of waste processing at TPS Bumi Asri and what impact it has had on the quality of public health. This study is important considering that waste is a health problem that is quite difficult to handle and requires cooperation from all parties, especially the community as the main producer of waste meaning that efforts to manage it must involve the community in particular.

2 METHOD

This study used a qualitative descriptive method with an explorative approach. Research was conducted for two months from July to August 2022. The research location was TPS Bumi Asri in Selemadeg Village. The population in this study was the entire Selemadeg Village community. The purposive sampling approach was taken. The sample consisted of seven main respondents and three supporting respondents. The processing of research permits and ethical tests at the ITEKES Bali ethics committee began with a request for a cover letter from the Rector of ITEKES Bali. A cover letter from ITEKES Bali for ethical clearance and a research permit to the Head of Selemadeg Village were obtained. The study was carried out after the research permit and ethical clearance were issued. Data collection was done through in-depth interview guidelines for the seven main respondents and three supporting respondents by implementing COVID-19 prevention health protocols. All research respondents were given an explanation of the research process before the interview and given informed consent forms to be signed. Data processing and data analysis were done using the Colaizzi method (Creswell and Poth, 2018). After that, categories were formed, grouped into sub-themes and main themes. The data presentation stage is in the form of sentence narration to allow accurate descriptions of the data and analysis results.

3 RESEARCH RESULTS AND DISCUSSION OVERVIEW OF RESEARCH SETTING

The Selemadeg Village in Tabanan Regency is the location of this study. This is one of the villages in Tabanan Regency, which topographically is a flat area with an altitude between 100-150 meters above sea level. Selemadeg village is located quite far from the center of the Bali provincial government. Its distance to Selemadeg District is about 3 km, to the capital of Tabanan Regency as far as 12 km, and to the capital city province about 50 km. This village was inhabited by more than 2,668 people and about 593 families. Selemadeg Village consists of one service village and four traditional villages with seven official banjars. Most of the population were farmers. Before there was a waste processing site in this village, people used to pile up their waste in gardens and vacant land behind their houses. This waste was not segregated, meaning organic and inorganic waste

were mixed. This waste was scattered and difficult to decompose. In 2019, the plan began to build a 3R waste processing site (TPS) in Selemadeg Village that was realized in 2021. This TPS has been running, but still has many obstacles, especially in terms of the availability of budget and tools for further waste processing.

3.1 Informants' Characteristics

The description of the characteristics of the main informants and supporting informants in this study include code, age, gender, education and occupation. The number of informants studied were 10 people consisting of seven community members, one informant from the village party, one midwife in charge of the Selemadeg Village Pustu, and one TPS Bumi Asri officer.

Table 1: Main Informants of the Selemadeg Village and TPS Bumi Asri Community's Characteristics.

Code	Age	Gender	Education	Occupation
R001	65 Years	F	Senior High School	Housewife
R002	31 Years	M	Bachelor Degree	Teacher
R003	36 Years	M	Bachelor Degree	Entrepreneur
R004	40 Years	M	Senior High School	Entrepreneur
R005	60 Years	M	Junior High School	Entrepreneur
R006	55 Years	M	Bachelor Degree	Teacher
R007	40 Years	M	Senior High School	Entrepreneur

Table 1. The data above shows that the main informants in this study were over 30 years old with a minimum educational background of junior high school. This allowed the main informants to understand the information that has been received, especially about waste management with the 3R method. In terms of education and work data, this study attempted to explore information from all levels of education and work as an effort to collect accurate data and generalize it.

Table 2: Supporting Informants of the Selemadeg Village and TPS Bumi Asri Community's Characteristics.

Code	Age	Gender	Education	Occupation
P001	46 Years	M	Bachelor Degree	Head Of Selemadeg Village
P002	59 Years	M	Bachelor Degree	Staff of TPS Bumi Asri
P003	46 Years	F	Diploma III	Midwife of the village

Table 2. This data shows that the supporting informants had competence in accordance with the research objectives. This enabled more accurate data to be obtained when data triangulation was performed.

3.2 Community Perception of Villages on Waste Problems

All of the main informants considered the waste problem in their village to be a very serious problem that must be addressed immediately. If this is not handled properly, it can lead to more serious environmental and health problems. The following are statements by the informants:

“This waste problem is a serious problem in our village, Ma'am. Especially if there is a traditional ceremony, which often produces a large amount of waste; it is very difficult to find a place to dispose of it. It is very difficult to handle daily waste. Indeed, many residents have moors. Most of this waste is piled up in the moors, and if there is time, some of it is burned. Waste that does not decompose, especially plastic waste, will be scattered and even pollute the environment and soil. Especially, when residents start burning their waste, air pollution will appear, Ma'am. Like me, personally, I still have a baby; often I am confused about how to throw away my baby's used diapers. Waste in the moor is often eaten and carried everywhere by dogs. I believe this is also a problem for most of the people in our village.” (R002, R005)

“Currently, this waste problem is still very difficult to solve in many villages, including in my village. People still produce a lot of plastic waste and also waste from household activities. Most of this waste is still dumped in the moor, and some is also dumped into the river. That's why the environment becomes dirty, and water and soil pollution can also occur. Actually, this is a very important issue to be addressed.” (R004)

“Before we had this TPS, people usually dumped their waste into the moor and around their homes. Because most people have a moor, they do not throw

waste into other people's fields. Even so, the waste in this moor is just piled up, not sorted and not processed; most often it is burned, but this can cause environmental pollution.” (R001)

The main informants' statements were also supported by the supporting informants below:

“This waste problem is a very complicated national issue to be solved. This is not only faced by urban communities, but also people in rural areas. The more the population, the more waste production. This results in fewer landfills. Moreover, we are aware that people's behavior towards waste management is still not good. Many do not realize that this waste can pollute the environment, directly or indirectly affecting the quality of our health. Especially in this Selemadeg village, before the establishment of the 3R TPS, this waste problem really became a serious problem because of the large amount of waste produced, especially during religious ceremonies.” (P001, P002)

“Before the existence of this TPS, the waste problem in this village was very complicated, Ma'am. There is a lot of waste production, but there is no special processing. Many people burn and litter in gardens or fields near their homes. In my opinion, this does not solve the problem, but creates a new problem because the waste is only moved but not processed. The thing that is more visible is when the waste sorting has not been maintained. Ma'am, when there is a religious ceremony, a lot of waste is generated. Wet waste from food, leaves and flowers left over from the ceremony are mixed together with plastic waste.” (P003)

Health includes physical and mental health, which can be influenced by several factors such as environmental hygiene factors (Presiden RI, 2009a). Environmental cleanliness is greatly influenced by the presence or absence of waste in the environment. Law number 18 of 2008 states that waste is the remains of human daily activities and/or natural processes in solid form. Waste can be divided into organic and inorganic waste. Organic waste is waste that can easily be decomposed in the environment. Examples of organic waste are waste from plants and their products, and waste from animals. According to the components contained in it, waste is also divided into biological and chemical waste. Biological waste is usually easier to decompose than chemical waste (Presiden RI, 2008). This waste problem needs proper management considering that, as long as there is a human life cycle, the waste production will never decrease. Waste that cannot be decomposed quickly will accumulate and cause further problems. Research conducted by Purwaningrum stated that waste

management in Indonesia was still a problem that has not been handled properly. Waste reduction activities, both in the community as waste producers and at the regional level, are still at around 5%; this number indicates the waste that is disposed of at the final processing site (TPA), while the landfill area is very limited. The largest composition of waste in the TPA apart from organic waste (70%) is inorganic waste, namely plastic waste (14%) (Purwaningrum, 2016) and (Ediana, Fatma, and Yuniliza, 2018).

3.3 Problems That Arise due to Waste Problems and Their Impact on Health Quality

All informants in this study realized that there were many problems that have arisen because of this waste problem. Furthermore, waste problems will have a negative impact on environmental health, which can directly reduce the health quality of individuals and rural communities. Hoarding waste in gardens and vacant land will not solve the problem, but will create new problems. This is in accordance with the statements of the informants below:

“What can be seen is that our environment is very dirty and unhealthy. Waste is scattered everywhere, especially household waste that is dumped in the moor. These are sometimes scraped by chickens and carried all over the place by dogs. When it rains this waste is washed away and pollutes the rivers around the moor. At a certain moment, residents burned their waste, causing air pollution because of the smoke from the combustion. This plastic waste sometimes cannot decompose quickly so that it can pollute and damage soil and water. In addition, the dirty environment has become a breeding ground for mosquitoes and flies as disease spreaders.” (R001, R006)

“Before this waste was processed at the TPS, I can describe this waste problem as a really complicated problem that seemed difficult to solve. Every day, we see food waste, plastic, paper and leaves scattered all over the place. Especially if there are children gathering and drinking canned drinks, the can is usually dumped into a ditch near the stall so that it clogs the gutter and often becomes a place for puddles of water for larvae. Sometimes, some people throw the carcasses of dead animals and used diapers that still have feces into the sewers, causing a foul smell. The most difficult thing is that if there is a traditional ceremony, this waste will pile up and become a place for flies to gather. I think this is very unhealthy for the environment we live in. In the past, there have also been complaints from stakeholders (Hindu saints)

who complained about the waste and diapers being carried away by the river and into Beji (a water source where Hindu rituals and sacred objects are purified). This is considered to have polluted the water quality and the sanctity of this Beji.” (R002, R005, R004)

“The disease outbreak has not yet occurred. There was once someone who had diarrhea but did not know the cause either wrong diet or unclean environment. The problem of dengue fever is seasonal; I do not know if it has anything to do with the piles of waste in the gardens and the people's moor. What I believe is that this waste is one of the risk factors for these diseases. What I am afraid of is that if this pile of waste is washed away during the rainy season, it can block the flow of the river and cause flooding.” (R003, R007)

The statements of the main informants were in accordance with the statements of the supporting informants below:

“The waste that has accumulated in the home environment is now piling up in the garden or moor. This waste is not reduced but instead is scattered, causing a bad smell, especially from household waste. This rotten waste is often infested with flies. Wet waste, leftover food, leaves and flowers left over from the ceremony were mixed together with plastic waste. Especially during the rainy season, the situation will get worse, this waste will be washed away by rainwater, clogging waterways and causing a foul smell. Fortunately, our village has not been flooded yet, maybe if the river is clogged, it might be flooded. If we look at health standards, it is clear that this is not healthy.” (P003)

“Many people still have fields where they throw their waste and burn some of the waste. But many do not realize that many of these fields are bordered by rivers so that the waste scattered on the riverbanks is sometimes carried away through the river currents and pollutes the downstream of the river. This is not in accordance with the slogan we often hear, namely clean my village without polluting other villages. Moreover, downstream of this river is a place of holy water (Beji) which is usually used during religious ceremonies. Yes, this will obviously damage the cleanliness and health of the environment as well as the sanctity of the place.” (P002)

Research related to the impact of waste on human health was carried out by Mulyati in 2021. This article explained the importance of knowing about waste management and its impact on the surrounding environment. The method used in this study was a qualitative method, which found that, in addition to affecting the quality of environmental health, waste can also cause disease. Diseases that are often

experienced due to improperly managed waste are diarrhea, dysentery, intestinal worms, malaria, elephantiasis, and dengue fever (Mulyati, 2021) and (Wahyudin, Fitriah, and Azwaruddin, 2020).

3.4 The Community's Role in Improving Waste Management

All informants in this study realized that the waste problem was a complicated problem and must be solved by all parties. This informant also realized that the community's role as the main waste producer was integral in terms of managing this waste from the household level. The following is as stated by these informants:

“As a community, we are very aware that this waste problem is our common problem, and we must solve it together. We are encouraged to collect and sort this waste into several types of waste, so I did it well. I prepared three types of trash bins in my house, namely plastic trash cans, leaf waste and the rest of ceremonial facilities and kitchen waste buckets. I also involve all my family members to immediately sort the waste when disposing of it. I also place trash cans in strategic places in my house such as the family room, kitchen and living room. I also always remind the whole family to always maintain cleanliness and throw waste in its place.” (R001, R005)

“I have been informed by the TPS staff and also by the head of the hamlet, so I have already sorted out my waste at home. Usually we will collect waste into plastic waste, leaf waste and also wet waste such as food scraps and kitchen waste. Sometimes we give wet waste directly to livestock or take it to the garden. This plastic waste and leaf waste will be taken to the TPS. Sometimes the waste that we can still use we reuse such as plastic shopping bags, plastic food boxes and other items that we can still use. Sometimes when I go to the market, I often bring my own shopping bag. I do not get a lot of plastic bags. In addition to diligently telling all the family to immediately sort out their waste, I also always prepare waste cans in several places such as in the kitchen, living room and family room. We have also distinguished this waste can between organic and inorganic waste.” (R002, R004, R007)

The statements of these key informants are also supported by the following supporting informants:

“We from TPS always try to socialize this waste management program to the community. We do this by regularly gathering village leaders. Selemadeg village consists of four traditional villages and one official village. At these meetings, we try to provide education and understanding about the importance of

waste management. We also have tried to encourage these village leaders to include the waste management budget in the Village RAB planning, both in the traditional villages and official villages.” (P002)

“This is already done, Miss. I always try to convey this to the chairman of the banjar and the residents of the banjar WA group, during banjar meetings and also PKK activities so that people no longer throw waste in the moor and try to sort out their waste. If it has been sorted, it will be taken to the TPS and further processed there.” (P001)

“In my opinion, because I am a health worker, I often talk about the dangers of this waste to the quality of our health. Usually, I participate in providing counseling and socialization about the importance of processing this waste at the integrated healthcare center.”(P003)

The results of this study were in accordance with research conducted by Rahmah, et al. (2021) on the Study of the Impact of Household Waste on Environment and Economy for District Communities in Sukarame Bandar Lampung City, which concluded that it is important to take special actions regarding awareness for people not to throw household waste carelessly in order to break the waste’s negative impact (Rahmah, Sari, and Amrina 2021).

3.5 Community Perceptions and Expectations of the Waste Processing Program with the 3R Method and the Existence of the TPS Bumi Asri

During the in-depth interviews regarding the public's perception of the TPS Bumi Asri, most informants strongly supported the existence of this TPS. This is as stated by the informants below:

“Fortunately, now there is a TPS; the community have been directed to sort the waste from the house into plastic waste, leaf waste, and kitchen waste. Usually the TPS will pick up trash 1-2 times a month depending on the amount of waste in the community. Usually the head of the hamlet will convey this at a meeting or through WA message about the time for this waste collection so that community can prepare their waste before it is taken.” (R001, R004)

“I really support the existence of this TPS. Although many of us have gardens to dispose of waste, this waste is not processed, accumulating over time. The existence of this TPS is very helpful in overcoming this waste problem, at least someone will transport waste from the community and manage it at the TPS. In addition, we have also been asked to participate in sorting this waste. Waste that we can

still use will be reused. We have also started to reduce the use of plastic and replaced it with various items. And the most important thing at this TPS is that the waste is reprocessed, especially the organic waste.” (R002, R005)

“The existence of this TPS is very helpful, Ma'am, especially for people who do not have gardens to dispose of their waste. Sometimes we are confused about where to take our trash. For those who own a moor, this is also very useful because the waste that is piled up in the moor without being processed will multiply and will be difficult to decompose.” (R003, R006)

“This TPS is very good for waste management in our village, Ma'am. This is clearly seen, in the past people still littered, but now it has started to be well-organized. Although this TPS is still new, it can still run quite well. Yes, there are still many obstacles but it is running, ma'am. Now, the waste has been taken to the TPS to be sorted and managed by TPS officers.”(R007)

The statements of the main informants were also supported by the supporting informants who also agreed with their opinion, as stated by supporting informants below:

“In 2019, the village government proposed a waste processing site, and fortunately it was approved; this Bumi Asri TPS was then established. Yes, even though it has not been operating optimally, it can help reduce the pile of waste in Selemaded village. This is very important because until now there are still many people that do not care about the waste problem and its impact on health. At this TPS, we try to manage waste in a way known as the 3R (reuse, reduce and recycle). When we have outreached to the community, we have conveyed to be able to reuse items that are still fit for use, reduce the use of plastic bags. If it is true that it cannot be used anymore, it will be just thrown away, and we will sort it back at the TPS.” (P001, P002)

“But fortunately there is now this TPS, so this waste problem seems to be starting to see a bright spot in terms of management. Moreover, since the 3R TPS system was developed, the community has been asked to sort their waste at the household level; later at the TPS, further sorting can be carried out immediately.” (P003)

A person's perception of an object or event greatly influences how a person behaves towards the object or event. One of the theories that is often used to analyze a person's perception and behavior is the Theory of Planed Behavior presented by Icek Ajzen in 2017. This theory is a development of the Theory

of Reasoned Action proposed by Icek Ajzen in 1980 (Ajzen, 2005) and (Ajzen, 2017).

4 CONCLUSIONS AND SUGGESTIONS

All informants in this study understood that the waste problem is a problem that must be taken seriously. Poorly managed waste can cause environmental, individual, and community health problems, which can directly reduce health quality. All of these informants strongly agreed with the existence of TPS as a place for waste management, especially with the 3R method. The community has experienced positive benefits from the existence of this TPS directly related to environmental cleanliness, disease prevention, changes in clean and healthy living behavior, and the economic value obtained from reprocessed waste. The government is advised to continue to facilitate the TPS management to be more optimal.

REFERENCES

- Ajzen, I. 2005. "Attitudes, Personality, and Behavior (2nd Edition)." *Milton-Keynes, England: Open University Press / McGraw- Hill*.
- . 2017. "Theory of Planned Behavior with Background Factors." <http://people.umass.edu/aizen/tpb>.
- Creswell, John W, and Cheryl N Poth. 2018. SAGE publication *Qualitative Inquiry & Research Design. Choosing among Five Approaches 4th Edition*.
- Ediana, Dina, Fitriah Fatma, and Yuniliza Yuniliza. 2018. "Analisis Pengolahan Sampah Reduce, Reuse, Dan Recycle (3R) Pada Masyarakat Di Kota Payakumbuh." *Jurnal Endurance* 3(2): 195. <https://www.researchgate.net/publication/>.
- Gubernur Bali. 2011. "Perda No. 5 Tahun 2011 (Pengelolaan Sampah)." www.blh.baliprov.go.id.
- . 2016. "Peraturan Gubernur Bali No.16 Tahun 2016 (Baku Mutu Lingkungan Hidup Dan Kriteria Baku Kerusakan Lingkungan Hidup)." <https://www.scribd.com>.
- . 2017. "Perda No. 1 Tahun 2017 (Perlindungan Dan Pengelolaan Lingkungan Hidup)."
- . 2018. *Jaminan Kesehatan Nasional Krama Bali Sejahtera*. Denpasar. https://www.diskes.baliprov.go.id/wp-content/uploads/2019/06/PERGUB_NOMOR_104_TAHUN_2018.pdf.
- Lembaga Negara RI. 2014. "Peraturan Pemerintah Republik Indonesia Nomor 66 Tahun 2014 (Kesehatan Lingkungan)." www.peraturan.go.id.
- Mulyati. 2021. "Dampak Sampah Terhadap Kesehatan Lingkungan Dan Manusia." [sers/Username/Downloads/Mulyati.pdf](https://www.username.com/downloads/mulyati.pdf).
- Peraturan Bupati (PERBUP). 2020. "Peraturan Bupati (PERBUP) No. 12 Tahun 2020 Tentang Perubahan Kedua Atas Peraturan Bupati Nomor 68 Tahun 2017 Tentang Peraturan Pelaksanaan Peraturan Daerah Nomor 6 Tahun 2013 Tentang Pengelolaan Sampah Rumah Tangga Dan Sampah Sejenis Sampah Rumah Tangga."
- Presiden RI. 2008. "Undang-Undang Republik Indonesia No.18 Tahun 2008 Tentang Pengolahan Sampah." *Physis. Rev. E* (1). <http://www.ainfo.inia.uy/digital/bitstream/item/7130/1/LUZARDO-BUIATRIA-2017.pdf>.
- . 2009a. "Undang-Undang Republik Indonesia Nomor 36 Tahun 2009."
- . 2009b. "UU RI No.32 Tahun 2009 (Perlindungan Dan Pengelolaan Lingkungan Hidup)." www.peraturan.go.id.
- Purwaningrum, Pramiati. 2016. "Upaya Mengurangi Timbulan Sampah Plastik Di Lingkungan." *Indonesian Journal of Urban and Environmental Technology* 8(2): 141–47.
- Rahmah, Naila Aulia, Novita Sari, and Dania Hellin Amrina. 2021. "Kajian Dampak Sampah Rumah Tangga Terhadap Lingkungan Dan Perekonomian Bagi Masyarakat Kecamatan Sukarame Kota Bandar Lampung Berdasarkan Perspektif Islam." *Holistic Journal of Management Research* 6(2): 42–59.
- Wahyudin, Wahyudin, Fitriah Fitriah, and Azwaruddin Azwaruddin. 2020. "Perencanaan Pengelolaan Sampah Di Pasar Dasan Agung Kota Mataram Dengan Pendekatan Reduce, Reuse Dan Recycle (3R)." *Jurnal Serambi Engineering* 5(2): 1079–89.