
The Processing of Household Waste by Residents of Griya Serpong Housing Complex, Serpong Sub-District, South Tangerang, Indonesia, in Compliance With Law Number 18 of 2008 and Law Number 32 of 2018

Reni Suryani¹, Nur Sa'adah², Ilhamsyah Lubis³

¹²³Universitas Pamulang Indonesia

Correspondent: dosen01779@unpam.ac.id¹

Received : October 2, 2023

Accepted : November 22, 2023

Published : November 30, 2023

Citation: Suryani, R., Sa'dah, N., Lubis, I. (2023). The Processing of Household Waste by Residents of Griya Serpong Housing Complex, Serpong Sub-District, South Tangerang, Indonesia, in Compliance With Law Number 18 of 2008 and Law Number 32 of 2018. *Sinergi International Journal of Law*, 1(3), 205-213.

ABSTRACT: The Waste Management Law Number 18 of 2008 mandates waste management at various levels, including producers, communities, industrial areas, traditional markets, and malls. Local government administrations in regencies and cities need to create or revise regional regulations (Perda) and design a communal-based waste management masterplan. Until now, waste management has largely been centralized, with an open dumping system at the final disposal site, which ended in 2013. There are three forms of urban waste management: centralization, decentralization, and centralization-decentralization. An ideal waste management pattern is neither purely centralized nor decentralized, but rather a combination of both. Organic Waste Management Facilities (OWMF) are established at the source of dominant waste generation (initial stage), with a recycling system similar to City Waste Management Facilities (CWMF) to support and assist in marketing the products of the OWMF established by Joint Business Groups (KUB) formed by the community, known as the "self-sustaining concept." Addressing the waste problem requires an examination of the current waste management practices to identify areas where improvements and enhancements can be made, so that only waste that truly cannot be recycled ends up in the final disposal site, such as hazardous waste (B3) that is incinerated directly. This research aims to provide a solution to the waste disposal issue, which is largely centralized in Indonesia.

Keywords: Waste Management, Waste Legislation, Waste and the Law.



This is an open access article under the CC-BY 4.0 license

INTRODUCTION

The increase in population, economic growth rate, and development in a region not only has positive effects on the well-being of the community but also brings about negative consequences, such as environmental degradation. Environmental damage is currently a global issue, and one of the contributing factors is waste (Andersson & Buser, 2022; Ferrante et al., 2018; Hussain & Mumtaz, 2014). Waste has become a fundamental problem in major cities, including those in

The Processing of Household Waste by Residents of Griya Serpong Housing Complex, Serpong Sub-District, South Tangerang, Indonesia, in Compliance With Law Number 18 of 2008 and Law Number 32 of 2018

Suryani, Sa'dah, and Lubis

Indonesia (Alblooshi et al., 2022; Banerjee & Sarkhel, 2020; Casazza et al., 2019; Marcello et al., 2021; Park et al., 2015).

Human life is inseparable from waste. Every day, people generate waste that needs to be disposed of, whether at home, in the office, or wherever we may be. It's not surprising that the amount of waste increases as the population grows. According to the Domestic Waste Statistics of Indonesia (2008), the total waste generated across Indonesia is estimated to be 38.5 million tons per year, with major metropolitan cities contributing 14.1 million tons of waste per year (KNLH, 2009:4). This figure will continue to rise if proper waste management is not implemented (Erdem, 2022; Yu et al., 2020).

Rubbish, according to the British definition, is solid waste comprised of organic and inorganic materials that are considered useless and must be properly managed to avoid environmental harm and safeguard development investments (SNI 19-2454-2002). Meanwhile, according to the Republic of Indonesia Law Number 18 of 2008, rubbish is the residue of human daily activities and/or natural processes in solid form (Ali et al., 2019; Eggimann et al., 2018; He et al., 2022).

Waste that is managed according to the Republic of Indonesia Law Number 18 of 2008 includes: (a). Household Waste: Household waste originating from everyday household activities, excluding feces and specific waste. (b). Similar Household Waste: Similar household waste originating from commercial areas, industrial areas, special zones, social facilities, public facilities, and/or others. (c). Specific Waste: Specific waste is waste that, due to its nature, concentration, and/or volume, requires special management. Specific waste includes waste containing hazardous and toxic substances - waste containing hazardous and toxic materials (Alonso-Muñoz et al., 2022; Chauhan et al., 2023; Nizar et al., 2021).

Based on the explanations above, waste is defined as any object or material that is no longer used by humans and is thus disposed of. The societal perception of waste often includes the notion that all waste is repugnant and dirty, leading to the belief that it should be burned or disposed of properly (Mulasari, 2012). Furthermore, waste generation is not only the responsibility of local governments but also of the entire community to manage waste in a way that prevents negative environmental impacts (Hardiatmi, 2011). Waste issues encompass three main aspects: downstream, process, and upstream. Downstream, there is an increasing trend in waste disposal. In the process aspect, there are limitations in resources from both the community and the government. Upstream, there is suboptimal implementation of final processing systems (Mulasari, 2016). Many people consider burning waste as part of waste management. However, such practices can lead to environmental pollution and health concerns. This attitude may be influenced by knowledge and age maturity (Mulasari, 2012).

In addition to knowledge, one of the current challenges in waste management is that building public awareness is not as easy as turning one's hand. It requires cooperation from all parties, including the public, government, and third-party supporters. Building awareness takes a significant amount of time (Cheng et al., 2014; Kaweck et al., 2021; Scaringelli et al., 2016). Positive examples and role models, as well as consistency among policymakers in a specific region, are also essential. Direct socialization activities about waste management can encourage community participation in waste management (Rizal, 2011).

According to Notoatmodjo, "the behavior and observable behavioral phenomena in organisms are influenced by both genetic and environmental factors. In general, genetic and environmental factors are determinants of the behavior of living beings, including humans. Heredity is the

fundamental concept for the development of the behavior of living beings in the future. This means that living beings, including humans, will continue to follow the behavior that has been taught previously and pass it on to the next generation. Meanwhile, the environment represents the conditions or surroundings in the development of that behavior. The mechanism between these two factors that results in the formation of behavior is called the learning process."

Waste management involves the utilization and use of facilities and infrastructure, including placing waste in provided containers, the process of waste collection, transfer, and transportation, as well as waste treatment until the final disposal process (Sahil, 2016). The lack of planning in waste management leads to the suboptimal waste management system. Additionally, the absence of waste processing facilities is a fundamental issue underlying this problem (Nilam, 2016).

In the waste management of the Pademangan sub district, Serpong District, Tangerang Regency, there are four sub-districts: Pademangan, Serpong, Gading, and Pageudangan. The residents of Pademangan have diverse livelihoods, including farmers, traders, teachers, factory workers, construction laborers, and more. The behavior of the community, as referred to by the researcher, pertains to the habits of individuals influenced by various factors, such as the environment, knowledge, culture, customs, genetics, and situations. This research examines the behavior of the community in managing household waste in the Pademangan sub district. It explores how the community manages their waste due to the absence of a Temporary Disposal Site (TPS) in the Pademangan sub district.

This triggers different behaviors as the choices made by the community in the Pademangan sub district for managing their household waste. Apart from behavior influenced by the environmental situation due to the absence of a Temporary Disposal Site (TPS), the behavior of the Pademangan community is also influenced by cultural factors or habits. Practices such as burning waste or disposing of waste along riverbanks have been long-standing behaviors, and these habits continue to persist. The behaviors carried out today are closely connected to what was learned from previous generations before them.

According to Saputro (2013), forms of community participation in waste management include:

- 1) Actively participating in waste bank socialization by engaging in discussions during these awareness campaigns.
- 2) Contributing to the cause by collecting, sorting, and saving waste to support the group's objectives.
- 3) Participating in training on waste management to turn waste into economically valuable products. Community-based waste management serves as an alternative approach for solid waste management in developing countries by involving community participation.

According to Sekito et al. (2013), community-based waste management in Mumbai, India, has been shown to increase public awareness about waste management, reduce the amount of waste being disposed of in landfills, and generate income for communities through waste sorting activities.

Currently, nearly all waste management ends up in landfills, putting a significant burden on these disposal sites. If this continues, it will require extensive land and expensive environmental protection facilities. The increasing volume of waste disposed of in landfills is due, in part, to the ineffectiveness of waste reduction and handling efforts at the source. To this day, some people

still adhere to the old paradigm of waste management, where waste is collected, transported, and then dumped in landfills. If this practice continues, large open dumps have the potential to release methane (CH₄) gas, which can increase greenhouse gas emissions and exacerbate global warming.

Therefore, one approach to address the waste issue is to focus on the source. In this approach, waste is managed at its source (upstream) before it reaches the landfill (downstream). Methods to achieve this include waste sorting and the implementation of the 3R program (reduce, reuse, and recycle).

Additionally, illegal dumping or illegal waste storage is a deliberate act of disposing of waste in a particular area to avoid the costs, time, and effort required to dispose of waste properly at legal disposal sites. Various types of land are utilized for illegal dumping, including abandoned buildings, vacant lots, roadways, or rural road lanes. This occurs due to poor lighting and accessibility, making these areas vulnerable to illegal waste disposal. Factors contributing to this problem include population density, physical characteristics (lack of available land), limited waste management alternatives (such as recycling), and government policies.

METHOD

The research method employed in this study is qualitative research. The research took place in the Pademangan subdistrict, Serpong District, Tangerang Regency, spanning a duration of three months, commencing in November for the preliminary proposal planning phase.

The research subjects included residents of Pademangan subdistrict and government officials from the local village administration. The research process encompassed pre-fieldwork, fieldwork, and triangulation stages.

In Chapter 3, the study discusses data collection techniques, which comprise observation, interviews, and documentation. Lastly, data validation techniques employed a sociological approach, primarily relying on primary legal materials as the main data source, obtained primarily through interviews with informants related to the research, such as the Head of the Tangerang Regency Land Office. Secondary legal materials were also used to support primary legal materials and were obtained through a literature review.

Secondary legal materials consisted of primary, secondary, and tertiary data in sociological legal research. This study is built on the foundation of knowledge derived from social facts associated with the actual implementation of the law in society.

RESULT AND DISCUSSION

Waste Management Program through the Use of Integrated Waste Management Facilities (TPST) 3R in Perum Griya Serpong, Kademangan Village, Setu Subdistrict, South Tangerang City

1. General Overview of the Location, Community, and its Issues

The Processing of Household Waste by Residents of Griya Serpong Housing Complex, Serpong Sub-District, South Tangerang, Indonesia, in Compliance With Law Number 18 of 2008 and Law Number 32 of 2018

Suryani, Sa'dah, and Lubis

South Tangerang City is an autonomous region that was established at the end of 2008 based on Law Number 51 of 2008 concerning the Formation of South Tangerang City in Banten Province, dated November 26, 2008. The formation of this autonomous region was a split from Tangerang Regency, with the aim of improving governance, development, and community services, as well as harnessing the area's potential. It consists of 7 districts, 49 urban villages, and 5 rural villages, covering an area of approximately 147.19 square kilometers with a population of over one million people, more precisely, 1,076,302 individuals.

Based on climate data from the Geophysics Station Class I Tangerang, the city experiences average air temperatures ranging from 23.7°C to 32.3°C. The average humidity and sunlight intensity are around 80.3% and 51.8%, respectively. The highest monthly rainfall occurs in February, with 664 mm, and the average annual rainfall is 145.3 mm. The highest number of rainy days in a month occurs in February, with 28 days. The average wind speed throughout the year is 4.6 m/second, with a maximum average speed of 31.5 m/second.

Despite development efforts and public services, it is felt that not all areas in South Tangerang City have been reached. This situation requires innovative approaches in development programs to address the infrastructure "lag" and to increase active community participation, thereby enhancing public services and accelerating the realization of community well-being.

2. Setu Subdistrict and Kademangan Village

Setu Subdistrict covers an area of 1490 hectares or 14.9 square kilometers, which constitutes 10.06% of the total area of South Tangerang City. Geographically, it is located to the west-south of the central area of South Tangerang/Pamulang. This region is situated along the connecting route between Cisauk Suradita in Tangerang Regency, Pamulang, Ciputat/Pondok Cabe in the east, and Gunung Sindur in Bogor Regency, Serpong/BSD, and North Tangerang in the north. Due to its location along this route, Setu is often traversed by sand trucks from Cisauk, which has contributed to its relatively slower development compared to other urban areas that have grown denser due to their connection with agricultural and industrial commodities.

The challenging landscape, characterized by undulating and hilly terrain, has made it difficult to establish infrastructure and utilities, which remains inadequate. This is evident from the absence of public transportation routes passing through Setu, the prevalence of damaged roads, widespread littering of garbage, the absence of a Regional Hospital, and the utilization of inadequate sub-district offices, considering it serves six villages/urban areas. These issues highlight the need for improving and constructing urban infrastructure to enhance the well-being of its residents.

Setu Subdistrict has the smallest population in South Tangerang, with 57,758 residents, and it also has the second-lowest population growth rate when considering its density.

Waste Issues Faced by the Community

Waste management problems in South Tangerang City are substantial due to the absence of an effective waste management system at the household, neighborhood, and city levels. The primary issue, or the core problem, is the accumulation of waste caused by:

- 1) A significant number of people dispose of waste, but very few take responsibility for managing it. The limited waste management efforts can be attributed to the lack of waste

disposal personnel interested in collecting waste, primarily due to the low compensation for waste collection.

- 2) The limited capacity of the local government in South Tangerang City is a significant constraint. This includes the absence of a final waste processing facility (TPA), a shortage of waste collection trucks to transport waste to the TPA, and the scarcity of Temporary Waste Disposal Sites (TPS). According to the South Tangerang City profile published by the Regional Development Planning Agency (Bappeda) of South Tangerang City, there are only three official TPS units, with the rest being informal, unregulated dumping sites. This can be observed along the road from Muncul in Setu Village to Pamulang, then Ciputat, where several informal TPS points are scattered along the route.
- 3) Insufficient knowledge among the local community regarding waste management practices, such as the lack of awareness about waste separation using the 3R principles, and the limited support from the community in managing waste.

The obligation of the community to manage their waste is based on the law

According to Law Number 18 of 2008 on Waste Management (UU 18/2008), waste is defined as the solid remains of human activities and/or natural processes. Waste management, on the other hand, refers to systematic, comprehensive, and continuous activities that encompass waste reduction and handling. The objective of waste management is to improve public health, environmental quality, and to transform waste into a resource.

In relation to waste management, both the central and local governments are obliged to finance waste management operations. Funding for these activities is derived from the state budget and local budgets. Local governments have the flexibility to engage in inter-regional cooperation in the form of collaborative waste management efforts, including joint ventures or partnerships for waste management. Furthermore, individual or collective local governments can also collaborate with waste management businesses to facilitate waste management operations. These partnerships are formalized through agreements between the local governments and the respective waste management entities. However, it is worth noting that only a few companies are willing to partner in waste management initiatives.

It is important to remember that anyone engaged in waste management business activities is required to obtain permits from the local authorities as per their jurisdiction. However, for community members who wish to independently manage waste within their locality, the government provides support. In practice, there is a growing trend of individuals managing their waste independently. This practice is rooted in the existing tradition of community waste management, where residents bring their waste to a local collection point, and the local government takes responsibility for transferring the waste to waste disposal sites.

The location of the Temporary Waste Disposal Site (TPST) or Material Recovery Facility (MRF) in RW 06 of Griya Serpong Housing, Kademangan Village, Setu Subdistrict, South Tangerang City was initially situated in Block F, Rt 04, in line with the existing conditions. However, this location bordered between the housing complex and a residential area, and it was situated alongside a water channel that sometimes experienced flooding. As a result, a portion of the waste ended up in the water channel, while the rest was scattered in various places, leading to a dirty and foul-smelling environment. The residents in the nearby residential area frequently complained about this situation, requiring the housing complex's residents to engage in communal efforts to address the

challenging issue. Consequently, waste caused a new problem, which was the potential for social conflicts among residents.

Based on input from waste management experts at BEST (Bina Ekonomi Sosial Terpadu), a non-governmental organization, the existing waste location was considered less suitable for being proposed as an MRF or TPST because of its small size, measuring only around 190 square meters. According to the housing developer's site plan, the land was designated for waste collection and as an access road to and from the housing complex. Continuing with this location would also impact the budget allocation from the local government, which was prepared for buildings on a larger land area, approximately 500 square meters. To address this issue, the residents and RW sought to find an alternative location. They decided on a site near a public cemetery in RT 05, which was designated as public facilities and social facilities (fasum/fasos) by the developer, and it had a land area of 570 square meters.

CONCLUSION

To make progress in waste management, it is advisable for the authorities to collaborate with the local community to better organize waste management programs. This can be achieved by: (a). Controlling, monitoring, and evaluating the waste management process. (b). To address the inadequacy of facilities and infrastructure, waste management authorities can allocate a portion of the proceeds from the sale of various inorganic waste crafts. For example, they can set aside some of the earnings from selling various inorganic waste crafts to purchase composting facilities, allowing all residents to engage in composting.

In addition, there is a lack of understanding of the importance of waste management. Waste management practices are often limited to improper disposal and burning. This is due to the absence of supporting facilities and infrastructure such as household waste bins, temporary storage locations (TPS), and more. The primary issue in waste management is the lack of land for building temporary storage sites (TPS) and access to the village, which is still under development. Another factor contributing to improper waste disposal is the insufficient awareness of residents regarding environmental cleanliness.

REFERENCE

- Alblooshi, B. G. K. M., Ahmad, S. Z., Hussain, M., & Singh, S. K. (2022). Sustainable management of electronic waste: Empirical evidences from a stakeholders' perspective. *Business Strategy and the Environment*, 31(4), 1856–1874. <https://doi.org/10.1002/bse.2987>
- Ali, M. H., Zailani, S., Iranmanesh, M., & Foroughi, B. (2019). Impacts of environmental factors on waste, energy, and resource management and sustainable performance. *Sustainability (Switzerland)*, 11(8). <https://doi.org/10.3390/su11082443>
- Alonso-Muñoz, S., García-Muiña, F. E., Medina-Salgado, M.-S., & González-Sánchez, R. (2022). Towards circular economy practices in food waste management: a retrospective overview and a research agenda. *British Food Journal*, 124(13), 478–500. <https://doi.org/10.1108/BFJ-01-2022-0072>

The Processing of Household Waste by Residents of Griya Serpong Housing Complex, Serpong Sub-District, South Tangerang, Indonesia, in Compliance With Law Number 18 of 2008 and Law Number 32 of 2018

Suryani, Sa'dah, and Lubis

- Andersson, R., & Buser, M. (2022). From waste to resource management? Construction and demolition waste management through the lens of institutional work. *Construction Management and Economics*, 40(6), 477–496. <https://doi.org/10.1080/01446193.2022.2081989>
- Banerjee, S., & Sarkhel, P. (2020). Municipal solid waste management, household and local government participation: a cross country analysis. *Journal of Environmental Planning and Management*, 63(2), 210–235. <https://doi.org/10.1080/09640568.2019.1576512>
- Casazza, M., Accardo, P. L., Severino, V., & Lega, M. (2019). Solid wastes wastewater and remediation costs in an urban slum: The case study of A Gypsy Camp in Napoli (S Italy). *Journal of Environmental Accounting and Management*, 7(2), 197–211. <https://doi.org/10.5890/JEAM.2019.06.006>
- Chauhan, R., Shighra, S., Madkhali, H., Nguyen, L., & Prasad, M. (2023). Efficient Future Waste Management: A Learning-Based Approach with Deep Neural Networks for Smart System (LADS). *Applied Sciences (Switzerland)*, 13(7). <https://doi.org/10.3390/app13074140>
- Cheng, S., Li, Z., Mang, H.-P., Liu, X., & Yin, F. (2014). Prefabricated biogas reactor-based systems for community wastewater and organic waste treatment in developing regions. *Journal of Water Sanitation and Hygiene for Development*, 4(1), 153–158. <https://doi.org/10.2166/washdev.2013.135>
- Eggimann, S., Truffer, B., Feldmann, U., & Maurer, M. (2018). Screening European market potentials for small modular wastewater treatment systems – an inroad to sustainability transitions in urban water management? *Land Use Policy*, 78, 711–725. <https://doi.org/10.1016/j.landusepol.2018.07.031>
- Erdem, M. (2022). Designing a sustainable logistics network for hazardous medical waste collection a case study in COVID-19 pandemic. *Journal of Cleaner Production*, 376. <https://doi.org/10.1016/j.jclepro.2022.134192>
- Ferrante, M., D'Agati, P., La Rosa, S. M., Carini, S. A., Trovato, A., & Fiore, M. (2018). Stinging-cutting accidents and healthcare waste management's knowledge among healthcare professionals in public hospitals in Catania (south Italy). *Open Public Health Journal*, 11, 330–338. <https://doi.org/10.2174/1874944501811010330>
- He, R., Sandoval-Reyes, M., Scott, I., Semeano, R., Ferrão, P., Matthews, S., & Small, M. J. (2022). Global knowledge base for municipal solid waste management: Framework development and application in waste generation prediction. *Journal of Cleaner Production*, 377. <https://doi.org/10.1016/j.jclepro.2022.134501>
- Hussain, M., & Mumtaz, S. (2014). E-waste: Impacts, issues and management strategies. *Reviews on Environmental Health*, 29(1–2), 53–58. <https://doi.org/10.1515/reveh-2014-0016>
- Kawecki, D., Goldberg, L., & Nowack, B. (2021). Material flow analysis of plastic in organic waste in Switzerland. *Soil Use and Management*, 37(2), 277–288. <https://doi.org/10.1111/sum.12634>
- Marcello, B., Di Gennaro, V., & Ferrini, S. (2021). Let the citizens speak: An empirical economic analysis of domestic organic waste for community composting in Tuscany. *Journal of Cleaner Production*, 306. <https://doi.org/10.1016/j.jclepro.2021.127263>

The Processing of Household Waste by Residents of Griya Serpong Housing Complex, Serpong Sub-District, South Tangerang, Indonesia, in Compliance With Law Number 18 of 2008 and Law Number 32 of 2018

Suryani, Sa'dah, and Lubis

- Nizar, M., Munir, E., & Munawar, E. (2021). HOUSEHOLD WASTE MANAGEMENT STRATEGY TOWARD ZERO WASTE CITY: A CASE STUDY OF Banda Aceh. *Journal of Sustainability Science and Management*, 16(3), 258–276. <https://doi.org/10.46754/JSSM.2021.04.018>
- Park, J.-H., Kim, S.-H., Delaune, R. D., Cho, J.-S., Heo, J.-S., Ok, Y. S., & Seo, D.-C. (2015). Enhancement of nitrate removal in constructed wetlands utilizing a combined autotrophic and heterotrophic denitrification technology for treating hydroponic wastewater containing high nitrate and low organic carbon concentrations. *Agricultural Water Management*, 162, 1–14. <https://doi.org/10.1016/j.agwat.2015.08.001>
- Scaringelli, M. A., Giannoccaro, G., Prosperi, M., & Lopolito, A. (2016). Adoption of biodegradable mulching films in agriculture: Is there a negative prejudice towards materials derived from organic wastes? *Italian Journal of Agronomy*, 11(2), 92–99. <https://doi.org/10.4081/ija.2016.716>
- Yu, H., Sun, X., Solvang, W. D., Laporte, G., & Lee, C. K. M. (2020). A stochastic network design problem for hazardous waste management. *Journal of Cleaner Production*, 277. <https://doi.org/10.1016/j.jclepro.2020.123566>
- Damanhuri, E., & Padi, T. (2010). *Pengelolaan Sampah*. Bandung: ITB
- Mulasari A., Heru H. A., & Muhadjir N. (2016) Analisis Situasi Permasalahan Sampah Kota Yogyakarta dan Kebijakan Penanggulangannya. *Jurnal Kesehatan Masyarakat* volume 11 nomor 2. [dx.doi.org/10.15294/kemas.v11i1.3521](https://doi.org/10.15294/kemas.v11i1.3521)
- Mulasari, S. A. (2012). Hubungan tingkat pengetahuan dan sikap terhadap perilaku masyarakat dalam mengelola sampah di dusun padukuhan desa sidokarto kecamatan godean kabupaten sleman yogyakarta. *Jurnal Kesmas* volume 6 nomor 3: 204-211
- Rizal M. (2011). Analisis Pengelolaan Persampahan Perkotaan (Studi kasus pada kelurahan Boya Kecamatan Banawa Kabupaten Donggala). *Jurnal Sipil Mesin Arsitektur Elektro (SMARTek)* volume 9 nomor 2: 155-172
- Sahil, Jailan. 2016. Sistem Pengelolaan Dan Upaya Penanggulangan Sampah Di Kelurahan Dufa-Dufa Kota Ternate. *Jurnal Bioedukasi* Vol 4 No (2) ISSN :2301-4678.
- SNI 192454:2002. Tata Cara Teknik Operasional Pengelolaan Sampah Perkotaan . SNI 3242:2008, Pengelolaan Sampah di Permukiman.
- Nilam Sari, Putri. 2016). Analisis Pengelolaan Sampah Padat Di Kecamatan Banuhampu Kabupaten Agam. *Jurnal Kesehatan Masyarakat Andalas* Diterbitkan Oleh: Program Studi S-1 Kesehatan Masyarakat Fakultas Kesehatan Masyarakat Universitas Andalas.