

SOCIO-JURIDICAL ANALYSIS OF COMMUNITY PARTICIPATION IN WASTE MANAGEMENT IN GURABESI VILLAGE JAYAPURA CITY

Lazarus Ramandei*, Marsal Arung Lamba**™

*Universitas Cenderawasih Jayapura, Indonesia E-mail: lazarus ramandey@ftuncen.ac.id

**Universitas Cenderawasih Jayapura, Indonesia

E-mail: marsal.arunglamba@gmail.com

Abstract

This research aims to provide an understanding of community participation-based waste management in Gurabesi Village, Jayapura Utara District, Jayapura City. The main focus is to identify regulations related to waste management, community participation mechanisms, and factors that influence such participation. The type of research used is descriptive qualitative, which aims to describe the phenomena that occur at the research location using socio-juridical analysis. Data collection techniques include interviews, observation, and documentation. Data analysis was conducted using descriptive qualitative techniques. The results showed that one form of community participation in environmental improvement efforts is by donating labor through direct participation. The community also holds meetings to participate directly in waste management. At the RT level, participation tends to be direct, while at the RW level it is more indirect. Based on Arnstein's categories, the level of community participation in Gurabesi Village can be classified at the Informing/Providing Information level. This level of participation is influenced by length of residence, where the longer residents live, the stronger their psychological ties to the environment. This research shows that community-based waste management in Gurabesi Village is not yet optimal, despite the participatory efforts of residents. Improved facilities and infrastructure as well as more intensive socialization on waste management are needed so that community participation can increase and waste management becomes more effective.

Keywords: Community Participation; Waste Management; Socio-Juridical.

Email Address: marsal.arunglamba@gmail.com

Received: September 25, 2024; Accepted: December 14, 2024; Published: December 30, 2024





[™]Corresponding author:

Abstrak

Penelitian ini bertujuan untuk memberikan pemahaman mengenai pengelolaan sampah berbasis partisipasi masyarakat di Kelurahan Gurabesi, Distrik Jayapura Utara, Kota Jayapura. Fokus utamanya adalah mengidentifikasi regulasi terkait pengelolaan sampah, mekanisme partisipasi masyarakat, dan faktor-faktor yang mempengaruhi partisipasi tersebut. Jenis penelitian yang digunakan adalah deskriptif kualitatif, yang bertujuan untuk menggambarkan fenomena yang terjadi di lokasi penelitian dengan menggunakan analisis sosio yuridis. Teknik pengumpulan data dilakukan dengan wawancara, observasi, dan dokumentasi. Analisis data dilakukan dengan menggunakan teknik deskriptif kualitatif. Hasil penelitian menunjukkan bahwa salah satu bentuk partisipasi masyarakat dalam upaya perbaikan lingkungan hidup adalah dengan menyumbangkan tenaga kerja melalui partisipasi langsung. Masyarakat juga mengadakan pertemuan untuk berpartisipasi langsung dalam pengelolaan sampah. Di tingkat RT, partisipasi cenderung bersifat langsung, sedangkan di tingkat RW lebih bersifat tidak langsung. Berdasarkan kategori Arnstein, tingkat partisipasi masyarakat di Kelurahan Gurabesi dapat diklasifikasikan pada tingkat Informing/Providing Information. Tingkat partisipasi ini dipengaruhi oleh lama tinggal, dimana semakin lama warga tinggal, maka semakin kuat ikatan psikologisnya terhadap lingkungan. Penelitian ini menunjukkan bahwa pengelolaan sampah berbasis masyarakat di Kelurahan Gurabesi belum optimal, meskipun sudah ada upaya partisipatif dari warga. Peningkatan sarana dan prasarana serta sosialisasi yang lebih intensif tentang pengelolaan sampah.

Kata Kunci: Partisipasi Masyarakat; Pengelolaan Sampah; Sosio-Yuridis.

INTRODUCTION

Waste management in Jayapura City faces unique challenges, such as a lack of adequate infrastructure and low public awareness of the importance of waste management. People's habit of littering, especially into water bodies such as rivers, worsens environmental quality and public health. This points to the need for a more effective and participatory approach to waste management.

This research focuses on the novelty of the waste management approach through increased community participation. By involving the community in the waste management process, it is expected to create a stronger sense of belonging to the surrounding environment. This research will also explore successful participation models in other regions and how they can be applied in Jayapura City.

The contribution of this research lies in identifying and analyzing regulations related to waste management and community participation mechanisms in Gurabesi Village, Jayapura Utara District. Through mapping the factors that influence community participation, this research aims to provide more effective policy recommendations in improving community involvement in waste management. Thus, this research not only contributes to local problem solving but can also serve as a reference for other areas with similar challenges.

METHOD

This research employs a qualitative methodology grounded in a sociological-juridical approach. This approach is particularly relevant as it examines the intersection of community participation and legislation concerning waste management, specifically focusing on Article 28 of Law No. 18 of 2008 regarding Waste Management. The study is situated in Gurabesi Village, Jayapura Utara District, Jayapura City, an area characterized by increasing population density and unique settlement patterns along the riverbanks.

The selection of Gurabesi Village as the research site is motivated by its distinctive geographical and socio-economic context. The village's settlement patterns, which align with both mountainous terrain and the Anafre riverbank, present specific challenges and opportunities for community-based waste management initiatives. Participants will be selected based on their roles within the community, including local leaders, residents actively engaged in waste management practices, and representatives from relevant governmental and non-governmental organizations.

Data will be gathered through a combination of primary and secondary sources to ensure a comprehensive understanding of the issues at hand. The following techniques will be employed:

- 1. Interviews: Semi-structured interviews will be conducted with community members, local authorities, and stakeholders involved in waste management to gather qualitative insights into their experiences and perceptions.
- 2. Documentation: Relevant documents, including local regulations, policy papers, and previous research studies related to waste management in Jayapura City, will be reviewed to provide context and background information.
- 3. Literature Study: An extensive literature review will be conducted to identify existing research on community participation in waste management and its legal frameworks.

To ensure the rigor of this study, several steps will be implemented:

- 1. Triangulation: Data will be cross-verified using multiple sources to enhance credibility.
- 2. Member Checking: Participants will have the opportunity to review findings to confirm accuracy.
- 3. Reflexivity: The researcher will maintain a reflexive journal to document biases and assumptions throughout the research process.

The data analysis will utilize Miles and Huberman's interactive technique, which consists of three key components: data reduction, data display, and conclusion drawing/verification.

- 1. Data Reduction: Initial data from interviews and documents will be systematically categorized to identify key themes related to waste management regulations and community participation.
- 2. Data Display: The organized data will be presented in matrices or graphs to visualize relationships between different factors influencing community participation.

Conclusion Drawing/Verification: Ongoing analysis will allow for preliminary conclusions to emerge throughout the research process, which will then be verified against participant feedback and additional data sources.

FINDINGS AND DISCUSSION

A. The Forms of Waste Management Regulation in Jayapura City

Since the amendment of the 1945 Constitution of the Republic of Indonesia, the constitutional system of the Republic of Indonesia has not escaped the changes that occurred during the reform period with the transition period of social, political, legal, and security so that it is still waiting for optimal results. In particular, legal transformation has undergone fundamental changes. This is in accordance with the content of the explanation of the 1945 Indonesian Constitution which explicitly states that the Indonesian State is based on law (rechtsstaat), not based on mere power (machtstaat).

As a state of law, it is appropriate that the principles of a state of law must be respected and upheld as the basis for making an environmental management policy. In accordance with the 1945 Constitution of the Republic of Indonesia (UUD RI) Article 33 paragraph 3 reads as follows "The land and water and the natural resources contained therein shall be controlled by the state and used for the greatest prosperity of the people". Article 33 paragraph 3 explains that everything on earth contained therein is controlled by the state and managed to be used as a form of increasing the prosperity of the people which refers to the principles of the basic right to a good and healthy environment.²

Law Number 18 of 2008 concerning Waste Management Waste,³ is one of the products of the modern world that is very difficult to solve. Every moment modern humans produce a large amount of waste. Every individual daily throws away waste as a result of fulfilling their life needs. For reasons of cleanliness and beauty, many human needs are packaged in wrappers that will clearly become garbage. Waste has become a problem for every district/city government. Even a big city was once named the dirtiest city in Indonesia with piles of garbage in almost every corner of the city. Therefore, as an effort to reduce the problems arising from poorly managed waste, Law No. 18/2008 on Waste Management (hereinafter referred to as the Waste Management Law) was issued on May 7, 2008.

The According to the provisions of Article 4 of the Waste Management Law, waste management aims to improve public health and environmental quality and make waste a resource. The Government of the Republic of Indonesia and local governments (provinces and districts/cities) are tasked with ensuring the implementation of good and environmentally sound waste management in accordance with these objectives.

First, developing and increasing public awareness in waste management. Second, conducting research, developing waste reduction and handling technologies. Third, facilitating, developing, and implementing efforts to reduce, handle, and utilize waste. Fourth, implementing waste management and facilitating the provision of waste management infrastructure and facilities. Fifth, encouraging and facilitating the development of the benefits of waste processing results, such as compost, fertilizer, biogas, energy potential, and other recycled products. Sixth, facilitate the application of local specific technologies that develop in local communities to reduce and handle waste. And seventh, coordinating between government agencies, the community, and the business world so that there is integration in waste management.

¹Soejono Seokanto. "Theory of Law and Social Change" (Teori Hukum dan Perubahan Sosial). Jakarta: Rajawali Press, 1981.

²Undang-Undang Republik Indonesia No. 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (*Law Number 32 of 2009 concerning Environmental Protection and Management*).

³Law Number 18 Year 2008 on Waste Management (*Undang-Undang Nomor 18 Tahun 2008 tentang Pengelolaan Sampah*).

In organizing waste management, the Government of the Republic of Indonesia has five authorities. First, establishing national waste management policies and strategies. Second, establishing norms, standards, procedures, and criteria for waste management. Third, facilitating and developing inter-regional cooperation, partnerships, and networks in waste management. Fourth, organizing coordination, guidance, and supervision of local government performance in waste management. And fifth, establishing policies for resolving disputes between regions in waste management.

In organizing waste management, the provincial government has four authorities. First, establish policies and strategies in waste management in accordance with Government policies. Second, facilitating inter-regional cooperation within one province, partnerships, and networks in waste management. Third, organizing coordination, guidance, and supervision of district/city performance in waste management. And fourth, facilitating the settlement of waste management disputes between regencies/municipalities in the province concerned.

In organizing waste management, the district/city government has six authorities. (1) determining waste management policies and strategies based on national and provincial policies. (2) organizing waste management such as the provision of waste containers, waste transportation equipment, temporary shelters, integrated waste processing sites, and/or waste final processing sites-at the district/municipal scale in accordance with the norms, standards, procedures, and criteria set by the Government of the Republic of Indonesia. (3) provide guidance and supervise the performance of waste management carried out by other parties. (4) to determine the location of temporary shelters, integrated waste processing sites, and or final waste processing sites, which are part of the district/municipal spatial plan in accordance with laws and regulations. (5) conduct periodic monitoring and evaluation every 6 (six) months for 20 (twenty) years of the closed open dumping system waste final processing sites. And (6) compile and organize a waste management emergency response system in accordance with its authority.

According to the provisions of Article 11 of the Waste Management Law, in the field of waste management, everyone has six rights. First, to get services in waste management in a good and environmentally sound manner from the Government of Indonesia, local governments, and or other parties given responsibility for it. Second, to participate in the decision-making process, implementation, and supervision in the field of waste management. Third, obtain correct, accurate, and timely information regarding the implementation of waste management. Fourth, get protection and compensation due to the negative impact of waste final processing activities. And fifth, receive guidance in order to carry out waste management in a good and environmentally sound manner.

Besides having rights, in the field of waste management everyone also has obligations. Everyone in the management of household waste and waste similar to household waste is obliged to reduce and handle waste in an environmentally sound manner, which must be regulated by regional regulations. Managers of residential areas which include residential areas in the form of clusters, apartments, condominiums, dormitories, and the like, commercial areas, industrial areas, special areas, public facilities, social facilities, and other facilities are required to provide waste sorting facilities, which must be placed in a place that is easily accessible to the community.

Based on the provisions of Article 24 of the Waste Management Law, the Government of Indonesia and local governments are obliged to finance the implementation of waste management, which comes from the state revenue and

expenditure budget and the regional revenue and expenditure budget. In addition, the Government and local governments individually or jointly can compensate people as a result of negative impacts caused by waste handling activities at the final waste processing site. Compensation is a form of government responsibility for waste management at the final processing site that has a negative impact on people. The compensation is in the form of relocation, environmental restoration, health and medical expenses, and or compensation in other forms.

Article 28 of the Waste Management Act states that "The community can play a role in waste management organized by the government and/or local governments." This means that the government is responsible for organizing waste management as well as the government's duties in the implementation of waste management, namely by improving management and local regulations. Promotion and increasing community participation Develop waste programs in accordance with the conditions of each region in order to create a clean and healthy environment.

According to the provisions of Article 29 of the Waste Management Law, there are seven prohibitions in the field of waste management for everyone. First, entering waste into the territory of the Unitary State of the Republic of Indonesia. Second, importing waste. Third, mixing waste with hazardous and toxic waste. Fourth, managing waste that causes pollution and or environmental damage. Fifth, disposing of waste not in the designated and provided place. Sixth, handling waste by open dumping at the final processing site. And or seventh, burning waste that is not in accordance with the technical requirements of waste management.⁴

Further provisions regarding the first, third, and fourth prohibitions are regulated by government regulation. Meanwhile, the fifth, sixth, and seventh prohibitions above are regulated by district/municipal regulations, which can stipulate criminal sanctions of confinement or fines.

District/municipal regulations related to the Waste Management Law can contain provisions that the regent/mayor can apply administrative sanctions to waste managers who violate the requirements stipulated in the license. The administrative sanctions can be in the form of government coercion or bestuurdwang/executive coercion, forced money, and or license revocation.

Law Number 32 of 2009 concerning Environmental Protection and Management⁵, that a good and healthy environment is the human right of every Indonesian citizen as mandated in Article 28H of the 1945 Constitution of the Republic of Indonesia. Therefore is a need for community participation in environmental management in this case waste management, community participation in environmental management is listed in Chapter XII, namely: Article 70 of Law No. 32 of 2009 concerning Environmental Management Paragraph (1) The community has the same and widest possible rights and opportunities to play an active role in environmental protection and management.⁶

Paragraph (2) The role of the community can be in the form of: a. Social supervision; b. Providing suggestions, opinions, proposals, objections, complaints; and/or. c.

⁴Article 29 of the Waste Management Law (Pasal 29 dari Undang Undang Pengelolaan Sampah).

⁵Law Number 32 of 2009 concerning Environmental Protection and Management (*Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup*).

⁶Undang-Undang Republik Indonesia No. 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup (*Law Number 32 of 2009 concerning Environmental Protection and Management*).

Submission of information and/or reports. Paragraph (3) The role of the community is carried out to: a. increase awareness in environmental protection and management; b. increase independence, community empowerment, and partnerships; c. foster community capacity and pioneering; 4. foster community responsiveness to conduct social supervision; and 5. develop and maintain local culture and wisdom in the context of preserving environmental functions.⁷

Minister of Home Affairs Regulation No. 33/2010 on Waste Management Guidelines, In order to realize a healthy and clean environment from waste, it is necessary to handle waste in a comprehensive and integrated manner from upstream to downstream, for which there is a need for community participation. In the Regulation of the Minister of Home Affairs Number 33 of 2010, community participation is regulated in Chapter V, which is contained in Article 33 which reads "The Regency/City Government increases community participation in waste management". then in Article 34, the form of community participation in waste management includes: a. Maintaining environmental cleanliness; b. Active in confinement, collection, selection, transportation, and waste management activities; c. providing suggestions, proposals, complaints, considerations and opinions in efforts to improve waste management in their area.⁸

Article 35 of the Minister of Home Affairs Regulation No. 33/2010 explains the forms of community participation, namely: 1). Increasing community participation as referred to in article 34 letter a is carried out by means of: socialization, mobilization, mutual cooperation activities; and/or, providing initiatives. 2). increasing community participation as referred to in Article 34 letter b is carried out by means of: a. developing information on business opportunities in the waste sector; and/or, b. providing initiatives, 3). increasing the role of the community as referred to in Article 34 letter c is carried out by means of: a. providing communication media, b. actively and quickly responding; and/or, c. conducting opinion nets with the community.⁹

In this Permendagri, it has been explained that in increasing community participation in waste management it varies, through socialization to the community by fostering a sense of concern for the environment.

B. Waste Management System in Jayapura City

The waste management system in Jayapura City is generally implemented based on 7 aspects of management, among others:

1. Operational Technical System, The operational technical system in the waste management system is largely determined by the volume of waste transported/disposed of to landfills waste operational activities depend on the operational patterns used, how sweeping, collection, transportation and final disposal. There are 4 operational patterns of waste management in Jayapura City (Jayapura City Government, Compilation of Jayapura City Waste System Master

⁷Article 70 of Law No. 32 of 2009 concerning Environmental Management Paragraph (*Pasal 70 dari Undang Undang Nomor 32 Tahun 2009 tentang Pengelolaan Lingkungan Hidup*).

⁸Minister of Home Affairs Regulation No. 33/2010 on Waste Management Guidelines (*Peraturan Menteri Dalam Negeri Nomor 33 Tahun 2010 tentang Pedoman Pengelolaan Sampah*).

⁹The Minister of Home Affairs Regulation No. 33/2010 (*Peraturan Menteri Dalam Negeri Nomor 33 Tahun 2010*).

- Plan, 2013): (1) Direct disposal to the open, (2) Conventional Waste Services, (3) Direct Urban Disposal to Landfill, (4) Waste Processing.¹⁰
- 2. Dumping System, Dumping system is the beginning of waste management, namely the placement of bin containers in each household. The existing container system in Semarang City is in the form of plastic in each household, bin containers from used tires or garbage cans Bin containers can also take the form of garbage box buildings of brick construction. In general, there is no separation between organic and inorganic waste.
- 3. Collection System, The collection system is a series to move waste from the containerization sub-system to the temporary shelter sub-system (TPS). The facilities used in some places use containers and some places use open TPS. The operational pattern is as follows (Hygiene and Cemetery Service, Jayapura City): (a) Temporary Shelter System (TPS), (b) Direct Sweeping System. The operation of the container system is the same as the temporary shelter system and the direct sweeping system on the street and directly transported by the garbage motor to the TPS.
- 4. Transportation System, The transportation system carried out by waste in Jayapura City by truck, both with the type of open tub and with an Arm-roll Truck with a capacity of 8m, the truck body can be moved hydraulically so that the waste unloading process can be effective. This sub-system is to transport waste from TPS to the final management site (TPA).¹¹
- 5. Final Disposal System, Waste from Jayapura City that is managed with the available facilities and infrastructure, both organic and inorganic waste at this time is still wasted to landfill, even B3 waste (Hazardous Waste Material) is also a burden on the landfill. Nafri and Koya Koso landfills are located in Muara Tami District, Jayapura City. Waste selection activities are carried out by scavengers located at the location, and items that can be recycled, or reused are taken and periodically sold to stalls.
- 6. Institutional and Organizational Systems, organization and management of waste management are factors to improve the usability and effectiveness of the waste management system Organization and management also have a major role in driving, activating and directing the waste management system with the scope of institutional forms of organizational patterns, personnel and management (planning, implementation, and control) for strategic, tactical and operational levels.¹²
- 7. Source of Financing and Retribution, Source of Financing The source of funds for waste management activities in Jayapura City comes from the APBD. The budget is obtained through income: cleaning retribution, desludging retribution, and other retributions.¹³

¹⁰Jayapura City Government. "Compilation of Jayapura City Waste System Master Plan" (Penyusunan Rencana Induk Sistem Persampahan Kota Jayapura), 2013.

¹¹Ramandey, L. "Community Participation in Domestic Waste Management in Vim Village, Abepura District, Jayapura City" (Partisipasi Masyarakat dalam Pengelolaan Sampah Domestik di Kampung Vim, Distrik Abepura, Kota Jayapura), 2019.

¹²Ramandey, L. "Waste Management Strategic Planning (Waste Management in Jayapura City)" (Perencanaan Strategis Pengelolaan Sampah di Kota Jayapura). Waste Technology 4, no. 1 (2016).

¹³SNI, 2008. "Procedures for Waste Management in Settlements" (Tata Cara Pengelolaan Sampah di Permukiman). Standard SK SNI 3242-2008, National Standardization Agency.

CONCLUSION

The form of community participation mechanism in waste management in Gurabesi Village, Jayapura Utara District, Jayapura City starts from the Planning stage process, namely identifying problems regarding waste management then preparing to make a decision and agreement between the government and the community, the Implementation Stage at this stage the government collaborates with stakeholders to conduct socialization about the form of waste management regulations. Then at the Monitoring and Control stage in the implementation of monitoring maintenance and improvement of community discipline, stakeholders need to report the results of monitoring activities carried out by managers to make reports, to be submitted to the government and the community according to agreed rules or mechanisms.

This Factors that influence the form and level of community participation in waste management in Gurabesi Village, Jayapura Utara District, Jayapura City can be seen in terms of occupation and length of stay. The type of work factor affects participation because it affects the degree of activity in the group and individual mobility. The type of work of a person is related to the free time they have, attention to the surrounding environment, income, insight and more or less affects the thinking pattern of a person. The more time spent working, the less opportunity there is to participate. The length of stay has a strong relationship with the form of community participation in the process of community involvement in meetings, physical activities/community service. The longer a person lives and settles in an area will generally have a positive influence on the development of their psychological life so that it can stimulate a deep sense of belonging which in turn grows awareness to maintain, manage and develop development results in the form of improvements to existing infrastructure and facilities. In this case, the greater the number of neighbors known, the higher the psychological bond with the environment, which affects the desire to be involved in joint activities.

BIBLIOGRAPHY

- Damanhuri, Enri, and Tri Padmi. "TL3150 Lecture Dictate of Waste Management. Environmental Engineering Study Program" (TL3150 Diktat Kuliah Pengelolaan Limbah, Program Studi Teknik Lingkungan). FTSL, ITB. Bandung, 2010.
- Department of Public Works. "National Policy and Strategy for Waste Management" (Kebijakan dan Strategi Nasional untuk Pengelolaan Limbah). Department of Public Works, 2005.
- Government Regulation No. 4 of 2001 on Environmental Control (*Peraturan Pemerintah No. 4 Tahun 2001 tentang Pengendalian Lingkungan Hidup*).
- Government Regulation No. 81/2012 on the Management of Household Waste and Waste Similar to Household Waste (*Peraturan Pemerintah No. 81/2012 tentang Pengelolaan Sampah Rumah Tangga dan Sampah Sejenis Rumah Tangga*).
- Hardjosoemantri, Kusnadi. "Legal Aspects of Community Participation in Environmental Management" (Aspek Hukum Partisipasi Masyarakat dalam Pengelolaan Lingkungan). Yogyakarta: Gajah Mada University, 1993.
- Jayapura City Regional Regulation No. 15 Year 2011 on Cleanliness (*Peraturan Daerah Kota Jayapura Nomor 15 Tahun 2011 tentang Kebersihan*).
- Jayapura City Regional Regulation Number 9 of 2009 concerning Jayapura City Spatial Plan 2008–2028 (Peraturan Daerah Kota Jayapura Nomor 9 Tahun 2009 tentang Rencana Tata Ruang Wilayah Kota Jayapura 2008–2028).

- Law Number 18 Year 2008 on Waste Management (Undang-Undang Nomor 18 Tahun 2008 tentang Pengelolaan Sampah).
- Law Number 32 of 2009 concerning Environmental Protection and Management (*Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup*).
- Lazarus Ramandey. "Community Participation in Domestic Waste Management in Vim Village Abepura District, Jayapura City" (Partisipasi Masyarakat dalam Pengelolaan Sampah Domestik di Kampung Vim, Distrik Abepura, Kota Jayapura), 2019.
- Lazarus Ramandey. "Waste Management Strategic Planning (Waste Management in Jayapura City)" (Perencanaan Strategis Pengelolaan Sampah di Kota Jayapura). Waste Technology 4, no. 1 (2016).
- Mochtar, Kusumaatmaja. "Environmental Law" (Hukum Lingkungan). Yogyakarta: Gajah Mada Press, 1975.
- Regulation of the Minister of Home Affairs. Number 33 Year 2010. "Guidelines for Waste Management" (Pedoman Pengelolaan Sampah).
- Rochim Armando. "Waste Handling and Management" (Penanganan dan Pengelolaan Sampah). Penebar Swadaya, Jakarta, 2008.
- SNI, 2008. "Procedures for Waste Management in Settlements" (Tata Cara Pengelolaan Sampah di Permukiman). Standard SK SNI 3242-2008, National Standardization Agency, 2008.
- Soerjono Soekanto. "Introduction to Legal Research" (Pengantar Penelitian Hukum). University of Indonesia Press, 1981.
- Syafrudin, 2004 in Tchobanoglous, Theisen, and Vigil. Integrated Solid Waste: Engineering Principles and Management Issues. McGraw-Hill, Inc., 1993.