Waste Disclosure Practices in Indonesia

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Abstract. Waste has negative impacts on this planet and can cause other environmental problems such as water, air, and soil pollution. In 2015, Indonesia was included as one of the five countries that supply plastic waste in the world's oceans. Several regulations have been made by the government to improve waste management, including involving companies to take their role in reducing waste generation and improving waste management. This study provides empirical evidence on the practice of corporate waste disclosure of non-financial listed companies in Indonesia 2020. Content and descriptive analyses were used as the research method. The result of this study encourages future discussions about corporate waste issues and waste disclosures in Indonesia. This research contributes to the corporate waste management and disclosure practices to improve stakeholders' interest.

Keywords: waste, waste disclosure, Indonesia, content analysis

1 Introduction

Stakeholder attention increases continuously along with growing awareness to preserve nature and encourage environmentally-friendly business performance. One of the impacts of business activities that cause environmental issues is waste generated. Waste is a residual product that is no longer used as a result of production, transfiguration, or consumption activities [1]. The waste presence can bring soil, water, and air pollution [2], triggering climate change, ecosystem problems, and human health issues [3]. First, the decay of the soil layer can harm the life of microorganisms in it, decrease the ability to store carbon, and disrupt the sustainability of plant growth [4]. The loss of the soil's ability to store carbon and the disruption of plant development can raise the amount of carbon that is trapped in the Earth's atmosphere [4] and rocket the Earth's temperature. Second, air pollution happens due to the burning of waste activities, it releases dangerous compounds into the air [2]. Third, the effluents that do not fulfill the quality standard before being discharged into open channels can cause disturbance to aquatic habitats [3]. Previous literature states that two hundred and eighty billion tons of water that are below the surface, called groundwater, are exposed to pollution of waste [2]. Finally, all of the negative impacts above will then end up in human health problems, see [5].

Mckinsey and Ocean Conservancy identify Indonesia as the second-largest waster of plastic waste to the world ocean [6]. Responding to the issue of waste, the Indonesian government has begun to introduce an environmentally-friendly business concept, known as the green economy or circular economy, which is also suggested by the World Bank [7]. The concept of waste management requires the participation of corporations because, first, corporations contribute greatly to generating waste from their activities in producing goods and services [8]. Second, the accelerated development of industries in frontier and emerging countries drive the increasing waste production, emissions of carbon dioxide, and consumption of energy [9].

The attention of the government of Indonesia regarding waste issues is marked by several regulations, first, the government set a national target related to reducing waste by 30% and increasing its management to 70% by 2025 which is asserted in Presidential Regulation number 97 issued in 2017 [10]. Second, Law number 3 of 2014 article 80 concerning industry states that green industry standards such as waste management must begin to be implemented gradually [11]. The third regulation regulates the disclosure of the waste management performance of public companies. This rule is issued by the Financial Services Authority in 2017 number 51/POJK.03 which governs sustainability reports where one of the disclosures that must be disclosed is waste performance [12]. In practice, although waste disclosures are officially implemented for non-financial companies on January 1, 2020, in previous years there have been several companies disclosed voluntary disclosures using the Global Reporting Initiative (GRI) standard which is compiled by the GSSB. GRI has been widely used as a guide for reporting non-financial information around the world [13].

This study focuses on discussing corporate waste disclosure to provide an overview of corporate waste disclosure practices in Indonesia. Disclosure is an instrument used by companies to convey performance and their corporate governance to stakeholders [14] and it can reduce the asymmetry information. Environmental disclosure is a symbol of responsibility and one of the sources of company investment decisions [15]. Companies that do disclosures can calculate and manage the waste they produce, maintain relationships with their stakeholders, and can transform into a circular economy [16]. Waste disclosure is one of the ways that the company uses to meet information needs and becomes media to communicate the waste management performance to parties outside of the company. It aims to report that the company makes an effort to meet stakeholder expectations to work with the least possible negative impact on the environment and pursue sustainable practices.

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Discussions related to waste disclosure are less attention [17][18]. This research is expected to encourage discussion regarding corporate waste management and disclosure as well as other environmental issues that have received great attention from academics. This investigation is conducted using a sample of listed companies on the Indonesia Stock Exchange 2020 that published sustainability reports in the observation period. The corporate waste disclosure investigation is carried out by utilizing content analysis. It employs GRI 306 2016 Effluents and Waste guidelines. This research found that the amount of waste disclosure is still low in Indonesia. It can be an input for the government to develop regulations that urge waste performance improvement and waste disclosure reporting.

This paper is arranged by five partitions. The next section provides a discussion of theory and previous literature. Section 3 explains the methods of the investigation. Furthermore, sections 4 and 5 supply information regarding empirical findings, discussion, constraints of this research, and recommendations for future examination.

2 Literature Review

Nowadays, the demand to operate in an environmentally-friendly manner is increasing among stakeholders. They want a company to be able to minimize the impact of activities on the destruction of the planet. A company needs to pay attention to changes in stakeholder interests over time to maintain sustainability [19]. Failure to meet stakeholder expectations can bring a detrimental impact on a company's sustainability because stakeholders can withdraw access to resources that they provide [19]. To meet the need for transparency of information related to waste management performance, a company communicates the waste performance that has been performed to meet stakeholder expectations. Corporate waste disclosure can be used to indicate the ability of the company to identify and calculate the amount of waste that they produce, maintain relationships with company stakeholders, and be capable to alter the business practice to the green concept, a circular economy [16].

A waste disclosure study is discussed using a sample of S&P 500 companies for the 2010-2015 period that is done by Benjamin et al. (2020) [17]. The result proves that waste disclosure is positively related to cash holding [17]. Another recent literature found that only 5 of 30 India's leading companies disclosed waste information reached 50% (of the 35 disclosure indices) over the observation period 2012-2018 and 15 samples only have average scores of less than ten [18]. Both previous studies mention that discussion on waste disclosure is scant. However, it is necessary to identify how the practice of waste disclosure is before investigating its role in other factors.

3 Methodology

Waste disclosure data come from the sustainability report 2020 of non-financial public companies that are listed in the stock market of Indonesia. Sustainability reports are one of the media that are often used by companies in informing their sustainability strategies [20]. Availability and access to data are the reasons behind the use of secondary data. The observation period 2020 is employed to describe the current practice of the company in waste disclosure. This research was conducted employing content analysis by using index disclosure of GRI 306 2016 about effluents and waste. Content analysis is a textual analysis by understanding the characteristics or messages of a text and then interpreting the content that is contained in it [21]. The identified information is then decoded into a code. We give scoring for the identified information where if the company does not disclose the score is 0, the score is 1 if the information is presented qualitatively and 2 if it is disclosed using quantitative information [13]. The reason for utilizing the index of GRI 306 2016 about effluents and waste is that this guidance has been effectively applied for reporting since 2018. While the latest GRI 306 2020 Waste is implemented at the beginning of this year. Second, the GRI 306 2016 has a wider scope of information on company waste performance guidelines than the waste disclosure regulation regulated by the Financial Services Authority in 2017 number 51/POJK.03. There are 12 disclosure indexes as follows [22]:

1. Disclosure 306-1 guides two disclosures about the discharge of wastewater. It consists of two disclosures about volume and place of discharge (306-1a) and methodology (306-1b).
2. Disclosure 306-2 is about the types of waste and methods of disposal. This point regulates information on hazardous waste (306-2a), non-hazardous waste (306-2b), and methods of their disposal (306-2c).
3. Disclosure 306-3 guides significant spills of information. This point consists of three parts of information namely substantial total of a spill (306-3a), detailed information regarding location, volume, and material of spill (306-3b), and impact of the spill (306-3c).
4. Disclosure 306-4 leads about the transportation of hazardous waste. This disclosure regulates three pieces of information namely the transportation and treatment (306-4a) and international shipping of hazardous waste (306-4b) and its methodology (306-4c).
5. Disclosure 306-5 informs about the impact of water discharge on water bodies and habitats.

After determining the index to be employed in conducting content analysis, the following are the stages of the content analysis process [23].

1. Finding the location of waste disclosure information.
2. Finding information that discloses the GRI indexes.
3. Giving a score to the identified information.
4. Disregarding unrelated information.
5. Counting the accumulated disclosure score.

4 Result

The investigation found that 18.23% or 113 companies have disclosed sustainability reports, either issuing a single report or issuing it in an incorporated report with the annual report. While the remaining did not find, 81.77% or 507 companies. The maximum score of corporate waste disclosure during the observation period is 14 out of a possible 24 (see table 1). Based on the finding, waste disclosure information is presented in various forms of qualitative and quantitative data. Information regarding types of waste, hazardous waste (306-2a), and non-hazardous waste (306-2b) are more disclosed in detailed quantitative data (see figure 1). While the most undisclosed pieces of information are, first, an explanation regarding the details of the substantial spill that occurred such as the location, volume, and material of the spill (306-3b). The investigation found that only 8 companies disclosed this detailed information. Most companies only disclose that there are no significant spills in the observation period without any additional explanation. Second, in line with the lack of detailed information regarding the spill, disclosures regarding the impact of the spill occurred (306-3c) are also only slightly disclosed. The analysis found that neither 109 companies disclose the information. Third, only one company was found to provide information regarding international shipping (306-4b). Finally, it is about methods or standards used (306-4c) to ship hazardous waste.

Table 1. Descriptive Statistic

Disclosure	Item	Obs	Mean	Stdev	Max	Min
306-1	2	113	1.61	1.38	4	0
306-2	3	113	3.93	2.05	6	0
306-3	3	113	0.44	0.76	3	0
306-4	3	113	0.94	0.86	3	0
306-5	2	113	0.17	0.37	1	0
306 (accumulation)	12	113	7.09	4.07	14	0

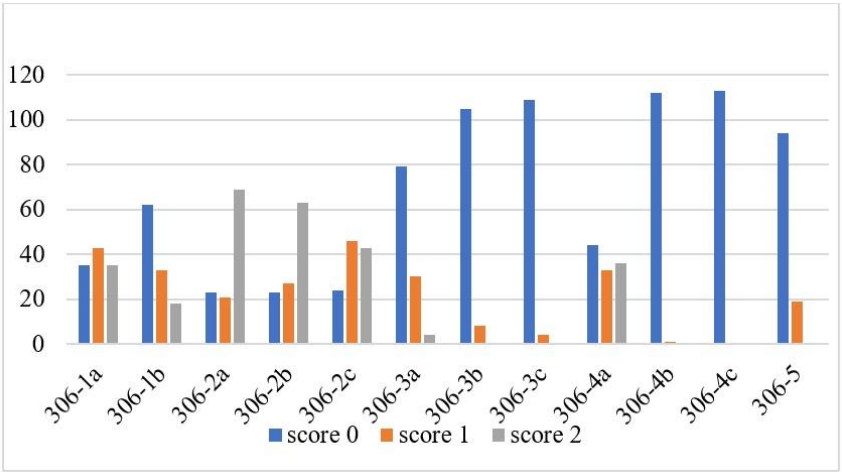


Figure 1. The Score of Disclosures for Each Disclosure Index

Based on the result of content analysis from 113 companies, it is found that 102 companies disclosed at least one of the GRI 306 2016 disclosure points. While the other 11 companies do not disclose any waste information. In other words, the accumulation of those disclosure scores is zero. The companies that provide the most information on waste disclosure are mining companies (see table 2), especially those from the coal mining

sub-industry. The average company from each industry has started exposing their waste information following international disclosure guidelines although it is still very low. This is the exception for the agriculture industry which is not found to have disclosed the impact of their effluent release on habitats and public water.

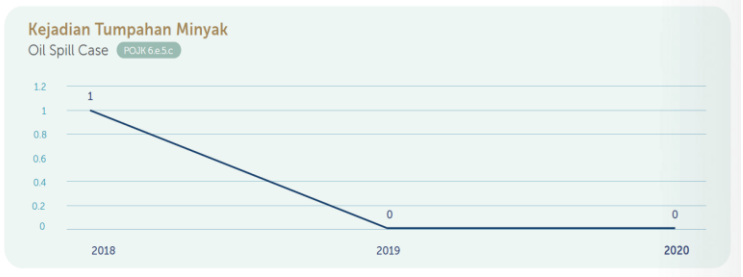
Table 2. Waste Disclosure

No	Industry Classification	Obs	Disclosure (in percentage)					
			306-1	306-2	306-3	306-4	306-5	306 (Accumulation)
1	Agriculture	11	8.24	11.71	14.00	12.26	0.00	10.86
2	Basic industry and Chemicals	13	14.84	15.09	10.00	13.21	10.53	14.36
3	Consumer Goods Industry	11	14.29	11.94	2.00	11.32	5.26	11.61
4	Infrastructure, Utilities, and Transportation	15	8.24	11.71	22.00	9.43	5.26	11.11
5	Mining	20	21.98	22.07	24.00	28.30	36.84	23.35
6	Miscellaneous Industry	4	3.85	4.28	2.00	3.77	5.26	4.00
7	Property, Real Estate, and Building Construction	15	17.03	13.51	20.00	14.15	26.32	15.11
8	Trade, Services, and Investment	13	11.54	9.68	6.00	7.55	10.53	9.61
Total		102	100.00	100.00	100.00	100.00	100.00	100.00

Several examples of corporate waste disclosure practices in 2020 are presented in table 3 below. The first point of the example shows the information about the amount of wastewater discharged into water bodies. Of 102 companies, the investigation found that for disclosure 306-1, the most widely disclosed information, either quantitatively or qualitatively, is the water released to either water bodies or company wastewater treatment facilities, 78 companies. Furthermore, the second disclosure example presents a table of the amount of waste generated by the company in the reporting year and how the company manages it. Disclosure 306-2 both hazardous and non-hazardous waste disclosures, either qualitatively or quantitatively, show the same number of information disclosures, 90 companies. Then, the third example disclosure shows a line chart that provides the trend of the spill that occurred. The most widely disclosed of 306-3, either qualitatively or quantitatively, is the total of spills, 34 companies. The fourth disclosure example displays hazardous waste shipping and recycling information. For disclosure 306-4 the most widely disclosed information either qualitatively or quantitatively is the total amount of hazardous waste both transported and processed, 69 companies. Finally, the fifth example shows the impact of wastewater discharge activities on the environment. The disclosure of 306-5 related to the impact of the wastewater discharge on water bodies and habitats only 19 companies expose the information.

Table 3. Example of Waste Disclosure Practices

No	Disclosure	Example of waste disclosure (captured from Sustainability Report 2020)
1	Wastewater discharge (306-1)	Amount of Waste Water (m^3) [306-1] Management / 2020 / 2019 / 2018 Disposal of processed IPAL (Wastewater Disposal Installation) channeled from the Industrial Estate IPAL. • Kalbe Farma - Cikarang. — 26,049 — 23,723 — 19,792 Disposal of processed IPAL products channeled into the Water Bodies from the Industrial or public areas. • Kalbe Morinaga – Cikampek • Bintang Toedjoe – Pulomas • Bintang Toedjoe – Pulogadung • Dankos Farma – Pulogadung — 183,278 — 170,499 — 144,572 Total Waste Water — 209,326 — 194,222 — 164,364 Source: [24]

<table>
<tr><th>No</th><th>Disclosure</th><th>Example of waste disclosure (captured from Sustainability Report 2020)</th></tr>
<tr><td>2</td><td>Types and disposal of waste (306-2)</td><td>
<table>
<tr><th colspan="2">Jenis Limbah Padat Non B3
Type of non-Hazardous Solid Waste</th><th>Jumlah
Total</th></tr>
<tr><td rowspan="4">Organik
Organic</td><td>Domestik
Domestic</td><td>1,321,015</td></tr>
<tr><td>Kertas
Paper</td><td>226,149</td></tr>
<tr><td>Lainnya
Other</td><td>12,303</td></tr>
<tr><td rowspan="4">Non Organik
Non-organic</td><td>Kaca</td><td>822</td></tr>
<tr><td>Plastik
Plastic</td><td>151,425</td></tr>
<tr><td>Ban Bekas</td><td>558,245</td></tr>
<tr><td>Lainnya
Other</td><td>54,708</td></tr>
<tr><td colspan="2">Metal</td><td>147,445</td></tr>
<tr><td colspan="2">Jumlah
Total</td><td>2,472,114</td></tr>
</table>
<table>
<tr><th colspan="2">Pengelolaan 3R
3R Management</th><th>Volume
(Kg)</th></tr>
<tr><td>Limbah Organik: Sisa makanan
Organic Waste: leftover food</td><td>Diolah menjadi kompos
Processed into compost</td><td>6,834</td></tr>
<tr><td>Limbah B3: Oli Bekas
Hazardous waste: Used Oil</td><td>Dimanfaatkan sebagai campuran bahan peledak ANFO
Used as mixture of ANFO explosive</td><td>503,070</td></tr>
<tr><td>Limbah B3
Hazardous waste</td><td>Didaur ulang oleh pihak ketiga
Recycled by third party</td><td>5,537,824</td></tr>
<tr><td colspan="2">Jumlah Limbah yang dikelola 3R
Total Waste managed with 3Rs</td><td>6,047,728</td></tr>
<tr><td colspan="2">Jumlah Limbah B3 dan Non B3 yang dihasilkan
Total Hazardous and Non Hazardous waste generated</td><td>10,363,001</td></tr>
<tr><td colspan="2">Persentase Pengelolaan 3R oleh anak usaha ITM dan pihak ketiga
Percentage of 3R processing by ITM subsidiaries and third party</td><td>58%</td></tr>
</table>
Source: [25]
</td></tr>
<tr><td>3</td><td>Spill (306-3)</td><td>


Source: [26]
</td></tr>
<tr><td>4</td><td>Transporting of hazardous waste (B3) (306-4)</td><td>
<table>
<tr><th colspan="3">HAZARDOUS WASTE</th></tr>
<tr><td>Hazardous waste reuse, recycled, downcycled or recovered on site</td><td>ton</td><td>12.172,32</td></tr>
<tr><td>Hazardous waste disposed on site landfilled</td><td>ton</td><td>296</td></tr>
<tr><td>Hazardous waste disposed to external landfill or incinerated without energy recovery</td><td>ton</td><td>756</td></tr>
<tr><td>Hazardous waste reuse, recycled, or recovered to external third party</td><td>ton</td><td>122</td></tr>
<tr><td>Total Hazardous waste</td><td>ton</td><td>13.345,77</td></tr>
</table>
Source: [27]
</td></tr>
<tr><td>5</td><td>Impact of water discharge on water bodies (306-5)</td><td>by applying the innovative wetland method. With this initiative, there is no record of any water bodies being affected by the release or overflow of water from the Company. [103-3, 306-5, 303-2]
Source: [28]</td></tr>
</table>

5 Discussion and Conclusion

This study investigates corporate waste disclosure practices 2020 in non-financial companies in Indonesia using content analysis. In 2020, non-financial public companies must expose their waste management information as a part of the sustainability report. However, in practice, the finding of waste disclosure is still very low in Indonesia. This condition happened because a small number of companies are found to disclose their sustainability reports, even though all public companies have been required in 2020 by the Financial Services Authority through regulation number 51/POJK.03/2017. This finding also indicates that companies in Indonesia do scanty waste disclosure compared to disclosure guidelines used globally. This is based on the result of the study that the maximum score for disclosure is 14 out of 24. There is still a need to expand the content of corporate waste reporting in Indonesia, for example providing detailed quantitative information suggested by the waste disclosure guidelines GRI 306 2016. In India, a study found that 85% of observed companies delivered limited waste disclosure [18]. The results confirm that sustainability regulations in developing countries are still low and lack of communication and weak trust among stakeholders are obstacles reaching company waste performance [9]. To drive waste management and disclosure performances, those are required authority roles, such as requiring the number of disclosure pages [29].

The benefits of disclosing waste information for companies are, first, it makes it easier for companies to identify areas and map out performance that needs to be improved and make strategic plans going forward to run an environmentally-friendly business. Second, complete information will affect the assessment of stakeholders to

the company's performance. The ability of the company to disclose waste performance indicates that the company can manage waste, meet stakeholder expectations and transform into a circular economy [16]. The disclosure can then be useful in making decisions for improving performance by considering input from stakeholders. Environmental disclosure is a symbol of responsibility and a source of corporate investment decisions [15]. Satisfaction of stakeholders with the transparency waste performance information will have an impact on increasing stakeholder trust in the company. This positive relationship can support the company's sustainability in the future, for example, ease of access to resources and ease of licensing obtained from the government.

This investigation employs the sustainability reports in 2020 to present the recent period. However, the use of a single observation period is the limitation of this study. Further research is suggested to expand the exploration period of waste disclosure practices in a country or a particular region. For example, the East Asia and Pacific region is referred to as the region with the highest percentage of waste produced in the world [30]. The implications of the study can encourage discussions on specific environmental disclosures, particularly corporate waste disclosure, in Indonesia. The need for increased regulation of both management and disclosure of waste information by companies can improve the protection of stakeholder interests. Finally, success in meeting stakeholder interests can encourage increased access to resources for both companies and the state in general.

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