



## Urban Solid Waste Management in the State Passo Baguala District of the City of Ambon



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### Abstract

This study aims to study and analyze to reveal data and information related to whether or not the optimal handling of waste in Passo Village, Baguala District, Ambon City. For this reason, the method used in this study is research with quantitative data analysis techniques using a Likert scale. The results of the analysis using the Likert scale percentage formula prove that the local government of Ambon City does not intensively provide socialization of Regional Regulation Number 11 of 2015 concerning Waste Management to residents, there are still limited State-Based Waste Bank Facilities for community residents, in addition to other indicators that are in the same category. The calculation results of each indicator prove this added up and then divided by 11, and the average value of the quality of the answers obtained is 1.70%. Therefore It can be concluded that the Handling of Waste in the State of Passo, Baguala District, Ambon City, especially at the Research site, is still not optimal by the Ambon City Regional Regulation because the value of 1.70% is a value that is in the Very Bad category (Score between 0%-20 %) According to the Litker Scale.

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## 1 Introduction

Most of the inorganic can not be decomposed by nature/microorganisms as a whole. Meanwhile, some others can only be described in a long time. This type of waste at the household level includes plastic bottles, glass bottles, plastic bags, and cans (Welfle et al., 2014). The role of temporary waste shelters (TPS) is significant for the community and the government in maintaining environmental cleanliness because before waste is disposed of in a final disposal site (TPA), it is first transported to a temporary waste collection site (TPS) in every area, both in the village, sub-district. As well as cities/districts are needed to help deal with the waste problem. The Indonesian Ministry of Environment and Forestry said the total waste in Indonesia reached 64 million tons per year. As much as 14% is plastic waste (Baiduri, 2016).

In the area bordering the Central Maluku Regency, many complain about the behavior of residents and traders at the Transit Terminal, people in Passo Village from other hamlets and are concerned that there is the accumulation and even garbage has piled up and strewn across the shoulder of the road, many donated by people from Central Maluku Regency. Garbage is often dumped in ditches on roadsides, thus disturbing the comfort of people who pass the causeway every day to the Natsepa tourist area, Hunimua beach, Liang village, and three districts on the island of Seram, namely West Seram District, Central Maluku, and Seram District. The eastern part is also through Liang and Tulehu villages. In addition to the unpleasant smell, when it rains, garbage is scattered on the road, the garbage used for rotting vegetables and fruits blends with the rainwater, which gives the impression of being dirty/dirty and smells bad because, at that location, it has been used as a beach tourist spot and a fruit tourism area. Even though the landfill in Toisapu has been operating for a very long time, the area around the Sunday market is still used as an impromptu landfill. The waste management paradigm used is the collection, transport, and disposal, and the central mainstay of a city in solving its waste problem is destruction by landfilling in a final disposal site (Damanhuri, 2005). A new paradigm of public administration emerged by formulating a series of ideals and practices related to using specific values and norms in carrying out public service accountability (Herizal et al., 2020). According to Tchobanoglous and Kreith et al. (2002), the source of waste in a community is generally associated with land use and zoning.

However, Meidiana & Gamse (2010), research identified that most landfills are operated as controlled open dumping landfills, even though the landfill is designed as a Sanitary Landfill (Munawar & Fellner, 2013). The Zero Waste (ZW) waste management system or "Eliminate Waste" is a holistic solution in managing waste and resources in a city in a sustainable manner (Zaman & Lehmann, 2011). MSW is defined in developing countries such as Indonesia as household waste or from commercial, industrial, particular areas, social facilities, and other facilities (Strategy, 2008). So that organizational policy partnerships are a factor in the successful implementation of government programs (Tuanaya & Wance, 2021). The quality of waste services is one of the indicators of good city governance (Scheinberg et al., 2010). This includes a strategy to minimize waste and the concept of "eliminating waste from processes and products (Zaman & Lehmann, 2011). Most landfills are operated as controlled open dumping landfills, even though these landfills are designed as Sanitary Landfills (Munawar & Fellner, 2013). Waste According to the Law of the Republic of Indonesia Number: 18 of 2008 concerning Waste Management, CHAPTER III, fourth part, article 9: The implementation of waste management in the regions is the authority of the Regency/City Government which includes:

- 1) Determination of the location of the final waste handling location by referring to the minimum criteria and standards for the final waste handling location.
- 2) The location plan for the final waste processing site must be included in the regency/city Regional Spatial Planning (Pillars of Stairs / Pillars of Residents) plan.
- 3) Determination of the location of the final waste handling site in a Regional Regulation on Regional Spatial Planning.
- 4) Establishing waste retribution rates.

## 2 Materials and Methods

This study uses a descriptive quantitative, and qualitative approach (Burawoy, 2009; Thorne, 2013; Boddy, 2016; Lancaster, 2007; Gill & Johnson, 2002; Bahn & Weatherill, 2013). Quantitative descriptive to obtain an overview of optimizing waste management and a qualitative approach focuses on a particular unit. The problem is studied comprehensively, detailed, and in-depth from the research variables and then analyzed and traced, including the possible causes. This research is located in the State of Passo, Baguala District, Ambon City. The reason for making

the State of Passo the research location is because there is a landfill in this country that has been piling up. The population in this study includes all community citizens from among women who already have the right to vote, amounting to 16,572. From the total population, the samples taken as samples by purposive sampling are as follows:

1) The Office of Cleanliness and Parks of Ambon City	10 people
2) Community Leader	10 people
3) Members of the Ambon City Regional House of Representatives	10 people
4) NGO Cares for the Environment	10 people
5) Housewife	20 People
6) Citizens	40 People

So that the sample in this study amounted to 100 respondents. The data obtained from the research location was then processed using quantitative data analysis techniques using a Likert scale. Based on facts or events in the field, the Likert scale is used to describe variable indicators of the measured variables; then, these indicators are used as a starting point for compiling the instrument's parts, which can be in the form of questions and answers (Lestariasih & Dewi, 2021; Archana et al., 2016). The answers to each instrument that uses Likert have questions posed to respondents given a gradation from very positive, optimistic, less optimistic, very not positive, or other grants adjusted to the questions asked in the questionnaire. The scoring starts from a high score with a score of 5 to the lowest with 1, Classification of designations with these categories is as follows:

Table 1  
Classification of the weight of respondents' answers

1	Very positive	5
2	Positive	4
3	Less positive	3
4	Doubtful	2
5	Not positive	1

Furthermore, to find out the Optimization of Waste Handling in the State of Passo, Baguala District, Ambon City, the respondents' answers can be classified into five groups: (1) Excellent score 5.00% - 5.99%. (2) Good score 4.00% - 4.99%. (3) Fairly good score 3.00% - 3.99%. (4) Not good score 2.00% - 2.99%. (5) Very bad score 0% - 1.99%. In addition, in analyzing the data, average analysis was used to determine the average respondents' answers in each category of questions with the help of frequency tables and percentage analysis (Bahri, 2021).

### 3 Results and Discussions

#### *Availability of information technology support*

Table 2  
Respondents' responses to the intensity of socialization of Ambon city regional regulation number 11 of 2015 concerning waste management to local residents

No	Respondents Response	Score (X)	(F)	(F.X)	Percentage (%)
1.	Very intensive	5	5	25	5.00
2.	Intensive	4	6	24	6.00
3.	Less intensive	3	6	18	6.00
4.	Doubtful	2	10	20	10.00
5.	Not intensive	1	73	73	73.00
Total			100	160	100.00
Average Score =		$\frac{160}{100}$	=1.60		

The description of the data in table 2 above shows that as many as five people or (5.00%) respondents answered that the Ambon City Government was very intensive in providing socialization on Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to residents, six people or (6, 00%) respondents answered Intensive, six people or (6.00%) respondents answered Less Intensively, ten people or (10.00%) answered Doubtfully, and 73 people or (73.00%) answered that it turns out that the Regional Regulation Ambon City does not intensively provide dissemination of Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to residents. The description of the data in diagram 6 above shows that the quality of respondents' answers regarding the Intensity of Socialization of Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to Local Residents, is in the non-intensive category because the majority of respondents, namely 73 people or (73.00%) answered that it turned out to be The Ambon City Regional Regulation does not intensively provide the dissemination of Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to residents (Griffith et al., 2003; Ngondi et al., 2006).

#### *Preparation of facilities and infrastructure*

Table 3  
Respondents' Responses to the indicators for the preparation of facilities and infrastructure

No	Respondents Response	Score (X)	(F)	(FX)	Percentage (%)
1.	Very complete	5	5	25	5.00
2.	Complete	4	9	36	9.00
3.	Less complete	3	6	18	6.00
4.	Incomplete	2	75	150	75.00
5.	Very Incomplete	1	5	5	5.00
Total			100	139	100.00
Average Score =		$\frac{234}{100} = 2.34$			

From the description of the data analysis in the table above, it shows that as many as five people or (5.00%) respondents answered that the Ambon City Government had prepared complete Waste Handling Facilities and Infrastructure, nine people or (9.00%) respondents answered thoroughly, six people or (6.00%) respondents answered incompletely, 75 people or (75.00%) respondents answered incompletely. One person or (1.00%) respondents answered very incompletely. The description of the data analysis above shows that the quality of respondents' answers regarding the Preparation of Complete Waste Handling Facilities and Infrastructure for Local Residents; after the measurement, it turns out that this indicator is in the incomplete category because the majority of respondents, namely 75 people or (75.00%) answered that it turns out that the Ambon City Regional Regulation does not prepare the Completeness of Waste Handling Facilities and Infrastructure for residents (Kam, 2020; Gao et al., 2015).

#### *Waste management guidance for citizens*

Table 3  
Respondents' responses to the indicators of waste management guidance to citizens

No	Respondents Response	Score (X)	(F)	(F.X)	Percentage (%)
1.	Very Intensive	5	5	25	5.00
2.	Intensive	4	9	36	9.00
3.	Less Intensive	3	3	9	3.00
4.	Not Intensive	2	4	8	4.00
5.	Never Done	1	79	79	79.00
Total			100	157	100.00
Average Score =		$\frac{157}{100} = 1.57$			

The description of the data in table 8 above shows that as many as five respondents or (5.00%) answered the Waste Management Guidance carried out by the Ambon City Government to residents Very Intensive, nine people or (9.00%) answered Intensive, three people or (3.00%) answered less intensively, four people or (4.00%) answered not intensively, and 79 people (79.00%) answered that it was never done at all. In the description of the data analysis it shows that the quality of the answers about the indicators for the Guidance of Waste Management by the Ambon City Government to residents, after measuring it turns out that this indicator is in the category never done at all because the majority of respondents are 79 people or (79.00 %) answered that the function of Guidance on Waste Management by the Ambon City Government to residents has never been carried out (Lundstedt et al., 1998; Graham et al., 1979).

*Introduction of household and environmental waste management to residents*

Table 4

Respondents' responses to indicators introduction of household waste management and the surrounding environment to residents

No	Respondents Response	Score (X)	(F)	(FX)	Percentage (%)
1.	Very Intensive	5	1	5	5.00
2.	Intensive	4	4	16	4.00
3.	Less Intensive	3	2	6	2.00
4.	Not Intensive	2	3	6	3.00
5.	Never Done	1	87	87	78.00
Total			100	120	100.00

Average Score =  $\frac{120}{100} = 11.20$

From the description of the data in the table above, it shows that as many as one respondent or (1.00%) answered that the Ambon City Government is Very Intensive Introducing household waste management and the surrounding environment to residents, four respondents or (4.00%) answered that Ambon City Government Intensive Introducing management of household waste and the surrounding environment to residents, two respondents or (2.00%) answered that the Ambon City Government is Less Intensive Introducing household waste management and the surrounding environment to residents, three respondents or ( 3.00%) answered that the Ambon City Government is Not Intensive Introducing household waste management and the surrounding environment to residents, and 87 respondents or (87.00%) answered that the Ambon City Government does not carry out activities Introducing household waste management and the surrounding environment to residents. In the description of the data analysis it shows that the quality of the answers regarding the indicators of Introduction to household waste management and the surrounding environment to residents is in the Never done position, this is because most of the respondents, namely 87 people or (87.00%) answered that the Ambon City Government does not carry out activities Introducing the management of household waste and the surrounding environment to residents (Singh et al., 2011; Costi et al., 2004).

*Residents' knowledge of recycling management and sorting waste according to type*

Table 5

Respondents' responses to indicator people's knowledge of recycling management and sorting waste by type

No	Respondents Response	Score (X)	(F)	(FX)	Percentage (%)
1.	Greatly Improved	5	2	10	2.00
2.	Increase	4	4	16	4.00
3.	Less Increase	3	3	9	3.00
4.	Not Increase	2	85	170	85.00
5.	Have No Knowledge at all	1	6	6	6.00
Total			100	211	100.00

Average Score =  $\frac{211}{100} = 22.11$

From the description of the data in the table above, it shows that as many as two respondents or (2.00%) answered that the residents' knowledge of recycling management and sorting waste according to its type was Very Improved, four respondents or (4.00%) answered that the knowledge of citizens would recycle management and sorting of waste by type Increased, three respondents or (3.00%) answered that the knowledge of residents about recycling management and sorting waste by type Less Increased, 85 respondents or (85.00%) answered that the knowledge of residents There is no increase in recycling management and sorting waste according to type, six respondents or (6.00%) answered that residents do not know at all about recycling management and sorting waste by type. In the description of the data analysis it shows that the quality of the answers on the indicators of the residents' knowledge of recycling management and sorting waste according to its type is in the not increasing category; this is evident from the answers of the majority of respondents 85 respondents or (85.00%) answered that people's knowledge of recycling management and sorting waste according to its type is not increasing (Ma et al., 2021; Dalemo et al., 1997).

*Utilization of inorganic waste into crafts to increase functional and economic value*

Table 6

Respondents' responses to indicators of utilization of inorganic waste into handicrafts to increase functional and economic value

No	Respondents Response	Score (X)	(F)	(FX)	Percentage (%)
1.	Growing very rapidly	5	1	5	1.00
2.	Growing rapidly	4	3	12	3.00
3.	Growing Less Fast	3	7	21	7.00
4.	Not growing fast	2	9	18	9.00
5.	Not Developing At All	1	80	80	80.00
Total			100	136	100.00
Average Score = $\frac{136}{100} = 1.36$					

From the description of the data in the table above, it shows that as many as one respondents or (1.00%) answered that the use of inorganic waste into crafts to increase the function value and economic value is proliferating, three respondents or (3.00%) answered that the utilization inorganic waste into handicrafts to increase the value function of the use of inorganic waste into crafts to increase the value of the function and value of the answer that the Utilization of inorganic waste into crafts to increase the value of the function and the economy is not proliferating, 80 respondents or (80.00%) answered that the Utilization of inorganic waste into crafts to increase the value of a function and economic value Not Developing at all. The description of the data analysis shows that the quality of the answers regarding indicators of Utilization of inorganic waste into crafts to increase the value of functions and the economy is in the Not Developed Category at all. This statement is supported by the answers of 80 respondents or (80.00%) who stated that the use of inorganic waste into handicrafts to increase the functional value and economic value is not developing.

*Enforcement of sanctions on violators of Ambon City Regional Regulation No. 11 of 2015 concerning waste management to local residents*

Table 7

Respondents' responses to indicators of enforcement of sanctions on violators of Ambon city regional regulation number 11 of 2015 concerning waste management to local residents

No	Respondents Response	Score (X)	(F)	(FX)	Percentage (%)
1.	Very firm	5	3	15	3.00
2.	Firm	4	2	8	2.00
3.	Lack of firm	3	2	6	2.00
4.	Not strict	2	6	12	6.00
5.	No Rule Enforcement	1	87	87	87.00
Total			100	128	100.00
Average Score = $\frac{128}{100} = 1.28$					

From the description of the data in the table above, it shows that as many as 3 respondents or (3.00%) answered that the Ambon City Government was very strict in enforcing sanctions on violators of the Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to Local Residents, 2 respondents or (2.00%) answered that the Ambon City Government is Firm in Enforcement of Sanctions on violators of the Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to Local Residents, 2 respondents or (2.00%) answered that the Ambon City Government is Less Firm in Enforcement of sanctions on violators of the Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to local residents, 6 respondents or (6.00%) answered that the Ambon City Government was not firm in enforcing sanctions on violators of the Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to local residents, and 87 respondents or (87.00%) answered that there is no rule enforcement n by the Ambon City Government in Enforcing sanctions on violators of the Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to local residents. The description of the data analysis shows that the quality of the answers regarding the indicators of Rules Enforcement by the Ambon City Government in enforcing sanctions on violators of the Ambon City Regional Regulations N is in the category of No Enforcement of Rules at all. This statement is supported by the answers of 87 respondents or (87.00%) who stated that there was no enforcement of regulations by the Ambon City Government to enforce sanctions on violators of the Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to residents.

#### 4 Conclusion

The results of data analysis using the litter scale percentage formula prove that the Handling of Waste in the State of Passo, Baguala District, Ambon City is still not optimal, this is strongly influenced by:

- 1) The Ambon City Regional Regulation does not intensively disseminate Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to residents in the naughty category because the quality value of the indicator is (1.60) between the comparative value (score 0%-20%). The Ambon City Regional Regulation does not provide completeness of facilities and infrastructure for handling waste to residents. This indicator is in the naughty category because the quality of the indicator is (2.34), which is between the comparative value (score 0%-20%). The local government is not firm in enforcing the rules for disposing of waste to the local community. This indicator is in the naughty category because the value of the quality of the indicator is (2.32), which is between the comparative value (score 0%-20%).
- 2) The function of Guidance on Waste Management by the Ambon City Government to residents has never been carried out at all. This fourth indicator is also in the nasty category because the quality value of the indicator is (1.57) is between the comparative value (Score 0%-20%). The Ambon City Government has never established a State-Based Waste Bank Facility for residents. This indicator is also in the terrible category because the quality value of the indicator is (1.48), which is between the comparative value (Score 0%-20%).
- 3) Ambon City Government Does Not Conduct Activities Introducing household waste management and the surrounding environment to residents. This indicator is also in the terrible category because the quality value of the indicator is (1,20) between the comparative value (score 0%-20%). People's knowledge of recycling management and sorting waste according to its type does not increase. Similar to the following indicators, this seventh indicator is also in the wrong category because the quality value of the indicator is (2.11) between the comparative value (Score 0%-20%).
- 4) The Indonesian Waste Bank Association (Asobsi) was not formed at all. The tenth indicator is in a terrible category because the quality value of the indicator is (1.42) between the comparative values (Score 0%-20%). There is no Enforcement of Rules by the Ambon City Government in Enforcement of Sanctions on violators of the Ambon City Regional Regulation Number 11 of 2015 concerning Waste Management to Local Residents. The eleventh indicator is also in the terrible category because the quality value of the indicator is (1,28) between the comparative value (score 0%-20%).

*Conflict of interest statement*

The author declared that she have no competing interests.

*Statement of authorship*

The author have a responsibility for the conception and design of the study. The author have approved the final article.

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