

Overview of the Waste Management System at Kariango Market, Mattiro Bulu District, Pinrang Regency

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Abstract. Waste is the result of human activities and comes from a natural process, where waste often causes problems, especially in public places. The market is an important means of trade for the community so that it has the potential to produce quite a lot of waste. The market is a certain place, where sellers and buyers meet, including facilities where sellers can display their merchandise by paying a fee, (Environmental Health Requirements TTU, Ministry of Health of the Republic of Indonesia 1993). The research method used is observational with a descriptive approach. Sampling by Random Sampling, where the sample size obtained was 211 people / traders, the collection was carried out with an observation sheet in the form of a checklist. The results of the observation showed that out of 211 traders, only 2 traders (0.9%) had good category trash containers and 209 traders (99.1%) had sufficient category trash containers, this shows that the existence of good trash containers in Kariango Market is still lacking. The results of data collection in the field, the collection system showed that out of 211 traders (100%) the collection of trash was in a good category. Garbage transportation can be seen that from 211 traders who were sampled, 208 traders (98.6%) transportation is categorized as good and 3 traders (1.4%) transportation is categorized as sufficient. For traders who do not have good garbage containers, they should immediately have good containers and what must be considered is that the material of the garbage container must be strong enough, waterproof, easy to fill, empty and easy to clean. The Department of Cleanliness, Parks and Fire of Pinrang Regency in order to maximize the transportation process should carry out transportation twice a week, namely after every market day.

Keywords: Waste Management System, Human Activities, Environmental Health

Received: October 6, 2024

Received in Revised: October 25, 2024

Accepted: November 18, 2024

INTRODUCTION

Health development is an integral part of national development. In the Health Law no. 36 of 2016 it is stated that health is a healthy state, both physically, mentally, spiritually and socially that allows everyone to live productively socially and economically, (Dwi, 2023; Maranjaya, 2021). The goal of health development towards a healthy Indonesia 2022 is to increase awareness, willingness, and ability to live healthily for everyone in order to realize the highest level of public health, as an investment for the development of human resources that are socially and economically productive, (Damopolii, 2016; Andriansyah, 2013; Sukayatin, 2022). Development cannot be carried out properly without the availability of one of the basic capitals, namely the condition of the level of public health (Bleakley, 2010). Public health must be a

reference for every step of development empirically, socio-economic development has had an impact on increasing the level in the health sector (Szirmai, 2005).

According to Hendrik L. Blum, the level of health is the result of the interaction of four factors, namely heredity, environment, behavior, and health services (Blum Hendrik, 1974). Of these four factors, it can be stated that environmental factors have the most important role compared to other factors. So in managing and utilizing the environment, it is necessary to pay attention to the impacts that will occur on changes in environmental conditions. For example, waste management which is directed at the provision and facilities and management techniques to achieve a clean environment (Van de Klundert & Lardinois, 1995).

Waste production in terms of quality and quantity is influenced by population, social conditions, economy and technological progress. Then it was reported that the amount of waste will increase with increasing population and income, (Aranda et al., 2023). Data from a study conducted by the US Public Health Service (USPH) stated that 22 types of diseases if waste management is not sanitary, including elephantiasis, dengue fever (DHF), and plague which is commonly known in Europe as "The Black Death". National data reveals that the average total waste produced in a day is 5 million cubic meters/day, both household waste, companies and industrial waste. For example, the city of Jakarta in 1985 produced 18,500 m³ of waste per day, in 2000 it increased to 25,700 m³ per day. If calculated in a year, the volume of waste in 2000 reached 170 times that of Borobudur Temple (volume of Borobudur Temple: 55,000 m³), (Bapedalda, 2000). In addition to Jakarta, the amount of waste is quite large in Medan and Bandung, (<http://www.walhi.or.id>, accessed May 16, 2022).

Traditional markets are an important means of trade for city dwellers. The presence of these traditional markets can disrupt society if their waste is not managed properly. One of the important means of trade, for example in Bandung City, is the Caringin Main Market located in. This market occupies an area of 11 hectares and is occupied by around 2100 traders. The waste in the Caringin Main Market is waste generated by the activities of traders and market visitors. There are 2 temporary disposal sites (TPS) in the Caringin Main Market area. The waste generation collected at TPS I is 101.68 m³/day with a density of 0.33 kg/l or equal to 33.55 tons/day, while the waste generation collected at TPS II is 33.89 m³/day with a density of 0.13 kg/l or equal to 4.4 tons/day, so that the total waste generation at Caringin Market is 135.57 m³/day or equal to 37.96 tons/day, (<http://www.cybergnews.com> accessed May 16, 2022).

METHODS

This research is a descriptive study with an observational approach, which aims to provide an overview of the waste management system at Kariango Market, Mattiro Bulu District, Pinrang Regency. This research was conducted at the location in 2022. The study population included all traders operating at Kariango Market, with a sample size of 211 traders selected using the Random Sampling method. Data collection was carried out through observation using a checklist sheet to evaluate various aspects of waste management, such as the condition of the trash bin, waste storage system, waste collection system, and waste transportation system. Each aspect is categorized as "good" and "sufficient". The data collected was analyzed descriptively to provide an overview of the percentage distribution of each category in each variable. The results of the analysis are presented in the form of tables and narrative descriptions to facilitate interpretation and understanding of the waste management system at Kariango Market. This method is expected to be able to provide useful information for market managers and related parties to improve waste management, thereby creating a cleaner and healthier market environment.

RESULT AND DISCUSSION

This type of research is a descriptive survey research which aims to describe the waste management system at Kariango Market, Mattiro Bulu District, Pinrang Regency.

Respondent Characteristics

Table 1. Distribution of Trader Types in Kariango Market Mattiro Bulu District, Pinrang Regency Year 2022

No	Types of Traders	n	%
1.	Textile Trader	43	20.4
2.	Grocery Trader	62	29.4
3.	Vegetable Trader	52	24.6
4.	Fish Trader	32	15.2
5.	Street Vendor	17	8.1
6.	Food stalls	5	2.4
	Total	211	100.0

Source: Primary Data

Characteristics of the variables studied

The characteristics of the variables in this study are good and sufficient, including storage, collection and transportation.

Containment

Table 2. Distribution of Waste Containers at Kariango Market Mattiro Bulu District, Pinrang Regency Year 2022

No	Containment	n	%
1.	Good	2	0.9
2.	Enough	209	99.1
	Total	211	100.0

Source: Primary Data

Table 2 shows that the waste containers from the 211 sample traders were 2 fruit (0.9 %) good category, containerized rubbish sufficient category as many as 209 items (99.1%).

Storage

Table 3. Distribution of Waste Storage in Kariango Market Mattiro Bulu District, Pinrang Regency Year 2022

No	Containment	n	%
1.	Good	104	49.3
2.	Enough	107	50.7
	Total	211	100.0

Source: Primary Data

Table 3 shows that the waste storage of 211 sample traders was 104 fruit (49.3 %) in the good category, waste storage in the sufficient category was 107 fruits (50.7%).

Collection

Table 4. Distribution of Waste Collection in Kariango Market Mattiro Bulu District, Pinrang Regency Year 2022

No	Collection	n	%
1.	Good	211	100.0
2.	Enough	0	0.0
	Total	211	100.0

Table 4 shows that the collection of waste from 211 traders who were sampled as many as 211 fruit (100.0%) good category, sufficient category waste collection as many as 0 fruits (0.0%).

Transportation

Table 5. Distribution of Garbage Transportation in Kariango Market Mattiro Bulu District, Pinrang Regency Year 2022

No	Transportation	n	%
1.	Good	208	98.6
2.	Enough	3	1.4
	Total	211	100.0

Source: Primary Data

Table 5 shows that waste transportation from 211 traders in the sample were 208 fruit (98.6 %) is in the good category, waste transportation is in the sufficient category as many as 3 fruits (1.4%).

Containment

It is important for every trader to have a waste container to prevent people from throwing waste anywhere. With the availability of containers, waste generated from market activities can be collected in a container before being transported to be disposed of in a temporary landfill to create a clean environment in public places. The results of data collection that has been carried out at Kariango Market, Mattiro Bulu District, Pinrang Regency In 2022, it can be seen that out of 211 traders observed, only 2 traders (0.9 %) who have good category waste containers, while as many as 209 trader (99.1 %) who have adequate category waste containers.

From the results of observations at the research location, it was shown that a good waste disposal system at Kariango Market is still lacking . because the provision of waste containers carried out by each trader only uses sacks, this is also traders do not know the impact on the environment if they use makeshift waste containers and factors that influence the lack of provision of good waste containers because buying and selling activities from previous days have increased on average traders use plastic bags, but even though traders have waste containers but are not used because of the density of buying and selling activities and there are also traders who throw garbage in random places because they do not have containers. Here it can be seen that traders do not pay attention to the impact and consequences of containers that do not meet health requirements, the intended container is the construction of the waste container made of materials that are strong enough so that they do not leak easily , are easy to fill, empty, and clean .

Compared with previous research conducted by Hamsah (2006) At Daya Market, Biringkanaya District, Makassar City, it was shown that out of 294 sample traders , 84 traders (28.6%) had good waste containers and 210 traders (71.4%) had waste containers . sufficient category, it can be seen that there is equality in ownership of waste containers in the good category which is still lacking. Compared with previous research conducted by Chiska Oktaviani (2015) at Rahayu Market, Sidareja District, Cilacap Regency, it showed that out of 209 samples, 71 traders (34%) had containers, while 112 traders (66%) did not have garbage containers. This shows that there is a similarity in the lack of attention to garbage containers in each market.

Storage

The results of the study show that the provision of storage facilities/temporary disposal sites at Kariango Market from 211 traders, who were observed as a whole, did not separate organic waste from inorganic waste. in this storage due to the limited provision of containers from the Government Office of the Cleanliness, Parks and Fire Service of Pinrang Regency. Compared with previous research conducted by Dian Al Arief (2015) Bunder Market, Sragen

Regency, Sragen showed that there was already a separation of waste in storage between organic and inorganic waste. Here it can be seen that from previous research there was a difference in Kariango Market, there was no separation in storage between organic and inorganic waste, while in Bunder Market, Sragen, there was already a separation in storage between organic and inorganic waste.

Compared with previous research conducted by Sariguna (2015) Polonia Market, Medan City, showed that there was no separation between organic and inorganic waste. This shows that there are similarities between Kariango Market, Pinrang Regency and Polonia Market, Medan City, in that there is no separation between organic and inorganic waste. Observation results at the research location from 211 traders as samples A total of 104 traders (49.3%) have good category storage while 107 traders (50.7%) have sufficient category storage. This shows that storage in Kariango Market based on objective criteria assessment is good. Temporary Disposal Site (TPS) available at Kariango Market, Mattiro Bulu District, Pinrang Regency is in the form of 1 container placed in a strategic location. The container has a fairly large waste capacity $\pm 6 \text{ m}^3$, based on information from cleaning staff and traders at Kariango Market, the length of time the garbage has been in the container 7 The new day is transported to the final disposal site (TPA), the container/ TPS is easily accessible by waste collectors and waste transporters and is safe from flooding.

The existing storage or temporary disposal site (TPS) conditions in Kariango Market, Mattiro Bulu District, Pinrang Regency has not met the requirements, because even though it is a container type, it is not equipped with a good cover and the distance does not meet health requirements. This allows the breeding of vectors and pests, in addition, the habit of traders only throwing garbage around the container, this kind of thing can cause the environment to become dirty and cause a bad smell that disturbs visitors and traders around it. The requirements in question are the placement of TPS at a minimum distance of 30 meters and a maximum of 200 meters, not located above / on the edge of water channels (drains, ditches, rivers) then the closest distance to the nearest water source (well, spring and others) is 75 meters and, not located in a flood area and easily accessible by transport vehicles (Directorate General of PPM & PLP 1996).

Collection

The results of the study showed that waste collection at Kariango Market, Mattiro Bulu District, Pinrang Regency, which had been observed and based on information from 211 traders, a sample of 211 traders (100%) was in the good category. Observation results at the research location regarding the waste collection system used in the waste collection pattern Individuals indirectly collect garbage from each – each source of waste uses an open cart not equipped with a cover besides the collector officer using cleaning tools, it can be seen that the garbage collection carts at Kariango Market, Mattiro Bulu District, Pinrang Regency are not meet technical health requirements. The requirements are that the garbage cart must be equipped with a cover or net so that the garbage does not scatter during the journey, the construction is strong, and the inner walls are lined with metal plates to make cleaning easier (Director General of PPM & PLP 1996).

Compared with previous research conducted by Mayun Nadisa (2016) in Amlapura City, Denpasar. The waste collection system used a direct communal pattern, here it can be seen that there is a difference in the collection system used in Amlapura City, Denpasar, a direct communal pattern, while the system used in Kariango Market, Pinrang Regency, is an indirect individual pattern. Compared with previous research conducted by Indra Yones (2014) in Natuna Regency, Riau Islands, the waste collection system used an indirect individual pattern, here it can be seen that there are similarities in the waste collection system at Kariango Market, Pinrang Regency and Natuna Regency, Riau Islands Province. Observation results at the Research Location illustrate the waste collection system at Kariango Market, Mattiro Bulu District, Pinrang Regency, when officers were carrying out collection activities, there was still a lot of waste scattered around the waste source and on the way to the temporary disposal site. This was caused

by the transport equipment, the walls of which were not too high so that the volume of waste transported was only a little and there was still some scattered.

From the results of observations at the Research Location, it can be seen that the southern corner of the market is used to burn garbage after the end of the Market Day that is not collected in containers, this kind of thing is very disturbing to both traders in the surrounding area and visitors/buyers, especially when pete-pete transportation passes by, the dust is very disturbing to market visitors, here it can be seen that the people who live around Kariango Market pay less attention to the waste management system and do not fully utilize the containers they have.

Transportation

Transportation is transporting waste from the waste source or location, temporary disposal site to the final disposal site. From the results of data collection that has been carried out regarding waste transportation at Kariango Market, Mattiro Bulu District, Pinrang Regency shows that of the 211 traders who were sampled and based on information from the cleaning staff, 208 traders (98.6%) were in the good category and 3 traders (1.4%) were in the sufficient category.

Based on the results of observations at the Research Location of the waste transportation system at Kariango Market, Mattiro Bulu District, Pinrang Regency in 2018, the 1 unit armroll type transport fleet is a watertight transport fleet because the tank material is made of iron, but there are also containers that are not watertight because the tank material is still leaking. The frequency of waste transportation at Kariango Market is carried out once a week and the volume of waste transported is ± 4 m³ · transportation is carried out on Thursday mornings between 08.00 and 09.00 WITA, the route used is the Pinrang - Pare main road. Compared with previous research conducted by Hamsa (2006) at Daya Market, Biringkanaya District, Makassar City, which showed that the frequency of waste transportation was carried out once a day, here it can be seen that there is a difference in the frequency of transportation at Kariango Market, Pinrang Regency, which is only carried out once a week, while the frequency of transportation at Daya Market, Makassar City, is once a day.

Compared with previous research conducted by Dwikorawan (2014) in Market The Semarang Level II Regional Municipality shows that the frequency of waste transportation is 1 to 4 times a day, here it can be seen that there is a difference in the frequency of waste transportation at the Kariango Market, Pinrang Regency, which only does it once a week, while at the Semarang Level II Regional Municipality Market, waste transportation is carried out 1 to 4 times a day. Garbage transportation is an important thing because if garbage transportation is not paid attention to and is not carried out properly, the garbage will... piled up, eventually they will rot and be scattered everywhere, The types of waste produced by Kariango Market are mostly wet waste which will make the environment dirty and smelly. delicious, This of course disturbs visitors The market causes the activities of traders and buyers to feel disturbed.

CONCLUSION

The results of data collection activities that have been carried out with The aim is to find out an overview of the waste management system at Kariango Market, Mattiro Bulu District, Pinrang Regency in 2018, the following conclusions can be drawn: The results of the study showed that the waste container system was known from Of the 211 traders who have been observed, only 2 traders (0.9 %) who have i good category trash containers and 209 traders (99.1%) trash containers are in sufficient category. This shows that the existence of good trash containers in Kariango Market is still lacking. The results of the study show that the storage system/Temporary Disposal Site It is known that from 211 traders who have been observed and based on information, 104 traders (49.3%) have sufficient category storage and 107 traders (50.7%) have good category storage. This shows that the waste storage system in Kariango Market is good. The results of the study showed that the waste collection system was known that from 211 traders (100%) waste collection was in the good category. This shows that the waste collection system at Kariango Market is already good. For traders who do not have good trash

containers, they should immediately have good containers and what must be noted is that the trash container material must be strong enough, waterproof, easy to fill, empty and easy to clean. Party Office of the Service Cleanliness Parks and Fires of Pinrang Regency so that containers/TPS have a separation between organic and inorganic waste at the Market location. The collectors/cleaning staff of Kariango Market should maximize waste collection, at least market waste must be collected at the temporary disposal site (TPS) in the afternoon.

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