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## SANITATION CONDITIONS OF TRADITIONAL MARKET ON SEDANAU ISLAND, NATUNA REGENCY, INDONESIA 2023

By

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### ABSTRACT

A healthy market is a place where all related parties work together to provide safe, nutritious and healthy food from an environment that meets health requirements. Poor access to sanitation in markets can result in various diseases. The specific aim of this research was to provide an overview of market locations, market buildings, market sanitation, market sanitation management, community empowerment and clean and healthy living behavior in the market, market safety, and an overview of market supporting facilities. The method in this research was observation using an observation sheet. The location in this research was carried out at the West Bunguran Sedanau Island Traditional Market which was carried out in July 2023. The results of this research showed that the market location met the requirements (80%), the market building did not meet the requirements (42%), market sanitation did not meet the requirements (53 %), market management does not meet the requirements (0%), community empowerment and clean and healthy living behavior does not meet the requirements (14%), market security does not meet the requirements (0%), supporting facilities do not meet the requirements (0%).

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## 1. INTRODUCTION

The environment is a condition that exists around humans that can affect human health. An environment that is not kept clean will make the environment unhealthy and can cause various diseases. This is due to the lack of knowledge and ability of the community in the health sector. A healthy environment also includes residential, workplace, and public places [1].

Globally, sanitation is a worldwide problem. Indonesia is ranked 2nd in the world as the country with the worst sanitation. Poor access to sanitation can lead to various diseases. Poor sanitation also contributes to malnutrition. About 2.4 million deaths in the world or about 4.2%. These problems can be prevented if you have sanitation facilities that meet the requirements set by the Minister of Health Regulation. Sanitation problems in developing countries are caused by several factors such as the lack of attention and priority given by the government or related agencies to the sanitation sector, the lack of availability of clean water, minimal hygiene behaviour, and inadequate sanitation in public places such as schools, hospitals, mosques, markets, and others [2].

Based on the Riau Islands Provincial Health Profile in 2019 the number of public places in Riau Islands was 4,473, but not all public places met the requirements. The number of public places that meet the requirements is 2,507 (56%) of the total public places available. Of the 7 regencies or cities in Riau Islands Province, Bintan Regency is the Regency with the highest percentage of sanitation of eligible public places. While Natuna Regency with the lowest percentage of Sanitation of Public Places that meet the requirements (35.5%). One of them is the market with a

percentage of (40.0%). This condition increases the opportunity for the spread of diseases influenced by the environment to traders, buyers and visitors in the market [3].

Based on previous research in Tarempa Village, Siantan Subdistrict, it was revealed that the market sanitation conditions of market sanitation infrastructure and facilities did not meet health requirements such as there were still dirty floors, dusty walls, leaking roofs, this market did not have fire fighting equipment and security posts. In addition, the market conditions also do not have water taps, do not have trash bins in each lot which only pile vegetable waste on the floor, causing various vectors such as flies, rats, and others. There is also an uncovered waste channel, and the waste is directly discharged directly into the sea, does not have a trash can to accommodate fish scraps so that these scraps are collected on the floor which will be disposed of directly into the sea. market toilet but does not have a separation sign between men and women, there is no place to wash hands and soap [4].

Meanwhile, research at Muara Market, Muara District, North Tapanuli Regency revealed that there is no special parking lot but the market community uses the road as a parking lot, The building in the market looks unmaintained such as there are still dusty walls, garbage that is still scattered both on the road and in the market aisle, Researchers also found that there is no separate trash can for dry and wet waste but market traders use buckets, bamboo baskets in each lot. Uncovered sewage channels that cause odours that can disturb sellers and traders. Researchers also revealed that market traders still do not apply clean and healthy living behaviours such as there are still traders smoking while selling, spitting carelessly and having long nails [5].

Based on the results of initial observations that have been carried out at the Sedanau Traditional Market, Bunguran Barat District, Natuna Regency, there is no special parking lot, the arrangement of food is not appropriate, and there is still garbage scattered in the market area. Based on the above problems, the researcher is interested in conducting research on the Sanitation Condition of the Sedanau Island Traditional Market, Bunguran Barat District, Natuna Regency in 2023.

**2. RESEARCH METHOD**

This type of research uses quantitative research conducted in an observational manner to obtain a description of the sanitary conditions of the Sedanau Traditional Market, Bunguran Barat District, Natuna Regency. This quantitative research conducted in an observational manner to obtain a description of the sanitary conditions of the Sedanau Traditional Market, Bunguran Barat District, Natuna Regency. The variables in this study are the description of the Sanitary Conditions of the Sedanau Traditional Market, Bunguran Barat District, Natuna Regency based on the regulation of the Indonesian Health Minister Number 17 of 2020 concerning healthy markets. The sub-variables of this study are market sanitation conditions which include market location conditions, market buildings, sanitation management, community empowerment and clean and healthy living behaviour of market communities, market security, and supporting facilities.

**3. RESULTS AND DISCUSSION**

Inspection of Sedanau Traditional Market was conducted for 2 days, namely on Sunday and Monday on 2-3 July 2023. This research instrument uses a form in accordance with the Minister of Health Regulation No 17 of 2020 concerning Healthy Markets. There are several items that were not checked in this market inspection, namely stairs, indoor air ventilation, and temperature. The following results of the research at the Sedanau Traditional Market are presented in the table below:

**Table 1. Sedanau Traditional Market Sanitation Inspection Assessment**

No	Variabel	Yes		No		Description
		n	%	n	%	
1	Location	4	80	1	20	Qualified
2	Building	18	42	25	58	Not qualified
3	Sanitation	20	53	18	47	Not qualified
4	Management	0	0	4	100	Not qualified



5	Community Empowerment and Clean and Healthy Behaviour	2	14	12	86	Not qualified
6	Security	0	0	8	100	Not qualified
7	Supporting Facilities	0	0	2	100	Not qualified
<b>Jumlah penilaian pasar</b>		<b>44</b>	<b>39</b>	<b>70</b>	<b>61</b>	

Based on Table 1, the inspection results obtained in the Sedanau traditional market, the market location variable is qualified with a percentage of 80%, then the market building variable is classified as not qualified with a percentage of 42%. The market sanitation variable is classified as not qualified with a percentage of 53%, then the market management variable on all items is not qualified with a percentage of 0%. The variable of community empowerment and clean and healthy living behaviour is not qualified with a percentage of 14%, the security variable of all items is not qualified with a percentage of 0%, the variable of supporting facilities of all items is not qualified with a percentage of 0%.

**Table 2. Sedanau Traditional Market Sanitation Inspection Assessment**

No	Variabel	Tool	Result	Threshold value	Description
1	Lighting				
	Toilet	Lux meter	237 lux	Min 100 lux	Qualified
	Office		173 lux	Min 100 lux	Qualified
2	Noise	Sound level meter	64,62	<85 Db(A)/hour	Qualified
3	Humidity	Hygrometer	76,3 %	40-60%	Not qualified

Based on Table 2, the results of the lighting inspection using the Lux Meter tool, Sedanau Traditional Market toilets are eligible with the result of 237 lux and the manager's office lighting is eligible with the result of 173 lux. The results of the noise check are qualified with the result of 64.62 Db (A) / hour. The result of humidity inspection is not qualified with the result of 76.3%.

The observation shows that Sedanau Traditional Market is in accordance with the spatial plan and is not located in a disaster-prone area. The market is not located on a cliff that is prone to landslides, but it is in an accident-prone area, near a highway, harbour and place of worship. There is an intersection on the road around the market, so traffic is quite heavy especially in the morning, which can increase the risk of accidents in the market environment. The market is in a good area, away from landfill sites. The boundaries of this market area have clear boundaries.

This is in line with previous research which revealed that the Impress Pujasera Village Market is not located in a disaster-prone area. The market is not located in a cliff area prone to landslides, a seaside prone to tsunamis, nor is it located near a large river prone to flooding. The market location is in a good area, which is far from landfills and not near and not passed by High Voltage Air Lines ([6]).

The strategic location of the market will affect people's interest in visiting the location to fulfil their daily needs. The determination of market location is not only a government decision but also the interests and stakeholders of market managers and market users. Traditional markets should be in areas not prone to disasters, not prone to accidents, not located in the final waste disposal, and must also have clear boundaries (sigra, 2020).

The market building has a division of special trading areas according to their type and meets the minimum main criteria, but does not have complete identity signage and does not meet the minimum general criteria but has a distance between vegetable and fish sellers. This is in line with research at Pasar Kemiri Muka Depok which reveals

that all kiosk and los buildings also do not meet the assessment requirements because the zoning division is not accompanied by complete identity [8].

The market has an aisle width of 0.90 metres which does not meet the minimum main criteria. This results in people having to jostle when roads intersect [9]. The market is also separated from pesticides and toxic hazardous materials from the food zone so that food meets the minimum primary criteria.

Stalls selling wet food and dry food do not use stainless steel tables, are flat and do not have sufficient slope. Meat is not packaged or protected and is only placed on the counter. Cutting mats or cutting boards are made of wooden materials that are easy to clean. Stalls selling wet food and food do not have a place to wash equipment and food ingredients. The dry food stalls at the Sedanau Traditional market do not have a selling table with a flat surface, easy to clean and 60 cm high. At wet food stalls, there are no hand washing facilities for each stall, only a shared hand washing area that is not equipped with soap.

The sewerage at the wet food stall flows smoothly directly into the sea but the wastewater is not covered, therefore it does not meet the minimum main criteria. This is in line with research conducted at Pasar Raya Solok which revealed that wet food stalls do not meet the requirements because the wastewater disposal is not covered and does not flow smoothly [10]. Wet food stalls have waste bins but are not separated between dry and wet waste, are not watertight and not closed, the bins are made of plastic material and there is no plastic coating that is easy to lift, so the minimum main criteria have not been met. This is in line with research in the Jember Regency Market which states that the bins in the food and food sales are baskets made of woven bamboo, not closed, not watertight, and not separated between wet and dry waste [11]. A healthy market is to have separate bins for wet and dry waste, watertight, closed and with plastic coatings that are easy to lift [12].

A healthy market is to have separate bins for wet and dry waste, watertight, closed and with plastic liners that are easy to lift [12]. During observations at wet food stalls, no disease-carrying vectors such as flies, cockroaches, rats and mosquitoes were found, so they fulfilled the minimum main criteria. There is no special area for loading and unloading, no stagnant water, no trash bins every 10 metres radius, no clear paths and entrance signs, no greenery, and no rainwater catchment. The construction of the Sedanau Traditional Market has a strong roof and does not leak, has a sufficient slope to prevent puddles. This is in line with research conducted at the Asem Jajar Traditional Market and Kokop Market which revealed that the roofs in these markets have strong roofs, do not leak and are still suitable for use [13]. The roof of the Sedanau Traditional Market has a height of more than 4 metres and is equipped with a lightning rod because it can reduce the effects of lightning strikes and can prevent shorting during bad weather.

The walls of the Sedanau Traditional Market have walls surrounding them. The walls are clean and light in colour. The surface of the wall is often exposed to water splashes because the walls are made of strong and waterproof materials, the surface of the floor with the walls is not curved (conus) but the surface is flat. This is in line with research conducted in Winenet Market, Bitung City, which revealed that the walls in the market are clean, not damp, light in colour and the wall surface is strong and watertight [14]. The floor condition in Sedanau Traditional Market has a watertight and non-slip floor. Sedanau Traditional Market has an uneven floor or has a cracked floor but is easy to clean. This is in line with research conducted at Pasar Blahbatuh which revealed that this market has cracked and uneven floors [15]. Bathroom floors and the like do not have sufficient slope and flow directly into the sea and this market does not have stairs because this market consists of 1 floor so it does not need stairs.

Sedanau Traditional Market does not have windows because the market is located outdoors so the lighting is more than enough because sunlight enters directly into the market. The lighting intensity is sufficient to carry out work both management and cleaning of food has fulfilled the minimum main criteria. For special doors for meat and fish sellers do not use doors, so the fish sellers' stalls are open and do not use doors. This is in line with previous research revealing that the Impress Pujasera Village Market does not have special doors for meat and fish sellers scattered in several market areas [6].

The availability of clean water in the Sedanau Traditional Market in sufficient quantities has fulfilled the minimum main criteria. The characteristics of water in the Sedanau Traditional Market bathroom are colourless and odourless, the source of clean water is from PDAM. Sedanau Traditional Market does not have a septic tank and has never been tested for clean water. The market's bathrooms and toilets are separated for men and women, but there are no markers for each bathroom and toilet. The bathrooms and toilets use buckets, so they are easy to clean. The floors of the bathrooms and toilets meet the minimum main criteria because they are made of wood stacked in a distance that does not allow puddles, there is no smell and there is no garbage scattered in the bathrooms and toilets. The market toilets do not fulfil the minimum main criteria because they do not have handwashing stations and soap. This is in line with previous research in Pasar Kasih Naikoten 1 Kupang City has a toilet but not separated between men and women both clean water using buckets, this market also does not have a hand washing place equipped with soap and running water [16].

Bathroom toilets and toilets do not have gooseneck toilets and septic tanks, but the Sedanau Traditional market uses a flush toilet that is directly discharged into the sea because this market is located on the harbour. Sedanau Traditional Market does not have a separate waste collection device within the market, has a temporary disposal site that is strong, watertight and easy to reach. The location of a qualified TPS must be more than 10 metres away from the market building. Rubbish is not collected every day but twice a week on Wednesdays and Saturdays and the market is in a clean state and is included in the minimum main criteria. The sewerage is not closed because the waste in this market is directly flowed into the sea smoothly. This is in line with research conducted in previous studies in Blimbing Market and Mergan Market revealed that these two markets still have poor sewerage because they are not closed and there is still garbage in the sewerage (Yaqin, 2019). This research is similar to previous research in the Liang Modern Traditional Market which revealed that the wastewater treatment plant has not met the requirements because there is no sewerage in this market [18]. This is also in line with research at the Blahbatuh Public Market revealing that there is a closed sewer with a metal grille but it is damaged so that there is garbage that accumulates and clogged [15]. Due to the waste of the Traditional Market being discharged directly into the sea, there are still buildings over the channel, namely community houses and there is no stagnant wastewater in the market, and it meets the minimum main criteria.

This market also does not have a WWTP, therefore it cannot be said that it does not have sufficient capacity and has never carried out regular wastewater quality testing every 6 months, the existence of a wastewater treatment plant which aims to remove suspended, floating materials and can also reduce pathogenic microorganisms contained in liquid waste (Marisa et al., 2021). Sedanau Traditional Market has never carried out thorough market disinfection one day a month, therefore there is no disinfection material that pollutes the market environment. This is in line with previous research at Kreneng Market, Puri Village, which revealed that this market has never been disinfected by spraying flies, mosquitoes, and cockroaches every month (Marisa et al., 2021).

Based on the results of observations on market sanitation management variables, waste management is managed by each stall owner so that they do not have special officers, standard operating procedures, and monitoring sheets. Sellers and workers do not use complete personal protective equipment. Personal protective equipment can maintain cleanliness and maintain contamination from traders [8]. The traders also have clean and healthy living behaviours such as disposing of garbage, cleaning wet garbage after each sale, but traders and workers still do not apply clean and healthy living behaviours by washing their hands because of the unavailability of soap, this can cause one of the diseases caused by the lack of hand washing using soap, namely diarrhoea [20]. This market has also never been inspected regularly every 6 months. Sedanau Traditional Market traders and workers are not currently suffering from infectious diseases such as: diarrhoea, hepatitis, tuberculosis, scabies, etc. This is in line with previous research at Panorama Market, Bengkulu City, which revealed that fast food traders were not suffering from direct infectious diseases such as diarrhoea, hepatitis and others [9].

Visitors still do not apply clean and healthy living behaviour to wash their hands before and after handling food such as poultry, meat or fish due to the unavailability of hand washing stations using soap. This is in line with previous research which revealed that visitors to the Impress Pujasera Village Market have not implemented clean and healthy living behaviours due to the unavailability of hand washing stations for visitors [6].

Based on observations, the Sedanau Traditional Market does not meet the minimum main criteria because there is no availability of fire extinguishers, hydrant pillars, fire instructions and also does not have security personnel and posts. Sedanau Traditional Market does not have a health service post, which is useful for providing first aid if a trader or visitor has an injury or accident while in the market space.

#### **4. CONCLUSION**

The results of this study indicate that the market location is qualified (80%), market buildings are not qualified (42%), market sanitation is not qualified (53%), market management is not qualified (0%), community empowerment and clean and healthy living behaviour are not qualified (14%), market security is not qualified (0%), supporting facilities are not qualified (0%).

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#### **REFERENCES**

- [1] Sudirman, 'Kondisi Sanitasi Lingkungan Pondok Pesantren Di Kota Makassar Tahun 2018', pp. 1–125, 2018.
- [2] D. Marinda and Y. Ardillah, 'Implementasi Penerapan Sanitasi Tempat-tempat Umum Pada Rekreasi Benteng

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- Kuto Besak Kota Palembang', *J. Kesehat. Lingkung. Indones.*, vol. 18, no. 2, p. 89, 2019, doi: 10.14710/jkli.18.2.89-97.
- [3] Dinkes Kepri, *Profil Kesehatan Provinsi Kepulauan Riau*. 2019.
- [4] V. Syintia, 'Gambaran Kondisi Sanitasi Pasar Sayur Dan Pasar Ikan Kelurahan Tarempa Kecamatan Siantan', Poltekkes kemenkes Tanjungpinang, 2021.
- [5] M. Sianturi, 'Gambaran Kondisi sanitasi pasar kecamatan muara, kabupaten tapanuli utara', pp. 1–60, 2021.
- [6] S. L. Nabila and A. M. Mandagi, 'Gambaran Sanitasi Pasar Desa Impress Pujasera Di Banyuwangi Tahun 2018', *Prev. J. Kesehat. Masy.*, vol. 12, no. 1, pp. 1–16, 2021, doi: 10.22487/preventif.v12i1.170.
- [7] D. Nasiti sigra, 'Analisis Faktor Lokasi Pasar Sidotopo Wetan', vol. 18, no. 1, pp. 1–9, 2020.
- [8] E. al Amelia, 'Analisis Implementasi Higiene Dan Sanitasi Di Pasar Kemiri Muka Kota Depok', *J. Kesehat. Lingkung.*, vol. 11, no. 2, pp. 99–102, 2021, doi: 10.47718/jkl.v10i2.1172.
- [9] B. Apriando, 'Gambaran sanitasi pasar panorama kota bengkulu', 2021.
- [10] E. M. Putri, 'Gambaran Kondisi Sanitasi Pasar Raya Kota Solok Tahun 2017', *Pustaka.Poltekkes-Pdg.Ac.Id*, 2017.
- [11] S. Arrazy, 'Persepsi Masyarakat tentang Higiene Sanitasi Pasar Tradisional Kota Medan', *Contag. Sci. Period. J. Public Heal. Coast. Heal.*, vol. 2, no. 1, p. 1, 2020, doi: 10.30829/contagion.v2i1.7276.
- [12] 2020 Permenkes, 'Peraturan Menteri Kesehatan Republik Indonesia Nomor 17 Tentang Pasar Sehat Tahun 2020'. 2020.
- [13] A. L. Ainiyah, S. Laili, and R. D. Lisminingsih, 'Persepsi Masyarakat terhadap Sanitasi Pasar Tradisional Asem Jajar', *Bioscience-Tropic*, vol. 6, pp. 8–12, 2021, doi: 10.33474/e-jbst.v6i2.275.
- [14] D. Johannes, 'Gambaran Kondisi Lingkungan Pasar Winenet di Kota Bitung Tahun 2019', *J. public Heal. community Med.*, vol. 1, pp. 84–89, 2020.
- [15] V. N. Seviana, 'Tinjauan Keadaan Sanitasi Pasar Umum Blahbatuh Di Kecamatan Blahbatuh Kabupaten Gianyar Tahun 2021', vol. 11, no. 1, pp. 37–44, 2021.
- [16] Y. Kase, *Tugas akhir tinjauan kondisi sanitasi pasar kasih naikoten 1 kota kupang tahun 2023*. 2023.
- [17] D. Yaqin, Ainul, Laili, Saimul, 'Persepsi Masyarakat terhadap Sanitasi Pasar Tradisional (Pasar Blimbing dan Pasar Mergan) di Kota Malang', *J. Ilm. BIOSAIN TROPIS*, vol. 4, no. 0341, pp. 21–25, 2019.
- [18] D. Chyntia Olyvia, 'HIGEIA JOURNAL OF PUBLIC HEALTH Gambaran Kondisi Fasilitas Sanitasi Lingkungan Pasar Tradisional di Kota', vol. 7, no. 2, pp. 303–311, 2023.
- [19] D. Marisa, 'Gambaran Keadaan Fasilitas Sanitasi Di Pasar Kreneng Desa Dangin Puri Kangin Kecamatan Denpasar Utara Tahun 2021', *J. Kesehat. Lingkung.*, vol. 11, no. 1, pp. 27–36, 2021, doi: 10.33992/jkl.v11i1.1452.
- [20] A. Radhika, 'Hubungan Tindakan Cuci Tangan Pakai Sabun Dengan Kejadian Diare Pada Balita Di Rw Xi Kelurahan Sidotopo, Kecamatan Semampir, Kota Surabaya', *Med. Technol. Public Heal. J.*, vol. 4, no. 1, pp. 16–24, 2020, doi: 10.33086/mtphj.v4i1.773.