

ANALYSIS OF PUBLIC PERCEPTION OF THE QUALITY AND ACCESS TO CLEAN WATER IN SEI RAJA SUBDISTRICT, TANJUNG BALAI CITY

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Abstract

This study aims to analyze public perceptions of the quality and accessibility of clean water services in Sei Raja Village, Tanjungbalai City. The approach used is a qualitative approach with data collection techniques through in-depth interviews, field observations, and documentation. The results of the study indicate that most people still complain about the condition of clean water used daily. The main problems felt by the community are the quality of water which is still colored, smelly, and tasteless, as well as the unequal access to clean water services, especially in areas far from the main distribution network. In addition, technical constraints such as limited infrastructure, distance to water sources, and service capacity also affect public satisfaction. The community has high hopes for the improvement of clean water services, both in terms of quality and distribution reach, as well as the active involvement of the government and community in participatory water management.

Keywords: *Public perception, clean water, water quality, access to clean water, Tanjungbalai City*

INTRODUCTION

Clean water is a basic human need that is very important in supporting daily life, both for consumption, hygiene, and sanitation. The availability of clean water is not only related to health aspects, but is also an important indicator in realizing a prosperous and sustainable quality of life for the community. In Indonesia, especially in urban areas such as Tanjungbalai City, the challenge of providing and equalizing access to clean water is still a fairly complex problem, especially in densely populated areas such as Sei Raja Village. Sei Raja Village, as one of the areas experiencing rapid population growth and economic activity, is faced with various problems related to the quality and availability of clean water. People often complain about the condition of the water which is cloudy, smelly, and not suitable for direct consumption. In addition, access to adequate and sustainable sources of clean water is also an obstacle, especially for residents who live in remote areas or areas with less than optimal water distribution infrastructure.

This problem is exacerbated by limited information and public understanding of clean water quality standards and awareness of the importance of preserving water resources. On the other hand, public perception of clean water services from related agencies also influences their attitudes and actions in meeting their daily water needs, including in choosing alternative water sources such as drilled wells, rainwater, or refilled water. Through an analysis of public perception, this study aims to comprehensively describe how the Sei Raja Village community views the quality and accessibility of the clean water they obtain. By understanding this perception, the obstacles faced can be identified, and provide a basis for local governments and clean water service providers in formulating more targeted policies and improvement strategies.

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Table 1.1 General Works SPM Data

Fulfillment of Daily Basic Drinking Water Needs

No	Subdistrict	Sub-district/Village	TARGET	REALIZATION		
			Total	Served by JP	Served by BJP	Not Yet Served
			(House unit)	(House unit)	(House unit)	(House unit)
1	2	3	4	5	6	7
1	Mayor	Jambi	2253	1690	1257	563
		the peg	1615	1196	1409	419
		Ivory	1981	1222	1038	759
		The Sea	2579	1591	1231	988
		Johor Beach	963	577	561	386
2	East Bdr Dtk	Cape Flower	1945	1200	1086	745
		The Strait of Lancang	1358	837	802	521
		The Strait of Tanjung Medan	1205	743	859	462
		Originally	1331	821	791	510
		Simardan Island	1626	1003	842	623
3	South Tanjungbalai	TB City 2	1755	1082	946	673
		TB City 1	749	462	427	287
		Work	437	269	284	168
		Officer	690	425	397	265
		Indra Sakti	540	333	339	207
		Bird Beach	1184	730	745	454
4	North Tanjungbalai	TB City 3	1097	676	676	421
		Halasan eyes	611	376	354	235
		Kuala silo Bestari	671	414	346	257
		TB City 4	1001	617	649	384
		Prosperous	906	559	589	347
5	The Sea of Tualang Raso	New Market	2136	1431	1305	705
		Sacred Dome	1139	702	563	437
		Source of essence	1094	675	545	419
		Estuary of Sentosa	1283	791	722	492
		King of the Sea	640	394	510	246
6	Nibung Bay	Kuala Kapias Shoal	2445	1508	1113	937
		Crocodile Island Cape	1936	1194	1134	742
		Merbau River	1626	1003	979	623
		Sand Bund	2138	1319	1173	819
		Struggle	1774	1094	1005	680
Total			42708	26934	24677	15774

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Service Percentage	63.07%		36.93%
SPM Achievement	63.07%		

The data in Table 1.1 regarding the Minimum Service Standards (SPM) of Public Works in fulfilling the basic needs of daily drinking water in Tanjungbalai City shows that the overall achievement of clean water services has only reached 63.07%, while 36.93% of households are still not served by an adequate clean water supply system. This illustrates that there is still a significant gap in access to clean water in the area. If reviewed specifically, Sei Raja Village in Sei Tualang Raso District recorded a target of 640 housing units, with 394 housing units served and 246 housing units not yet served. In other words, more than 38% of Sei Raja Village residents have not received clean water services directly from the official distribution system, and are very likely to rely on alternative water sources such as dug wells, drilled wells, or purchasing refilled water. This condition certainly affects the community's perception and experience of the quality and accessibility of clean water in their area. The limitations of this service have an impact on the community's perception of the quality of the water received, both in terms of clarity, smell, taste, and level of safety for consumption. When some people do not get access from official providers, they are likely to use water from sources whose quality is not guaranteed, which can lead to health risks such as skin diseases, diarrhea, and digestive tract infections.

On the other hand, the lack of equitable clean water distribution infrastructure also forms negative public perceptions of the government or service providers, especially regarding the fairness of public services. The public may feel neglected, especially when compared to other sub-districts that have been served in greater proportions. This has the potential to cause dissatisfaction and reduce public trust in the effectiveness of basic service policies. In addition, in the context of perception, the community in Sei Raja Sub-district may not only assess the quality of the physical aspect of the water they consume, but also from the aspect of the sustainability of supply, costs incurred, and the speed of service response in the event of disruptions. This level of dissatisfaction can also be strengthened by direct experience or information between residents regarding complaints about clean water services. Thus, through the approach of analyzing public perceptions, a more comprehensive picture can be obtained regarding the real impact of limited clean water services on the lives of the people of Sei Raja Sub-district. The results of this analysis are expected to be an important basis for formulating policy interventions and programs to improve clean water services that are more targeted and in favor of communities that have been underserved.

The urgency of this research lies in the importance of understanding the public's perception as a whole regarding the condition of clean water that they access every day. Public perception not only reflects direct experience of water quality and availability, but also reflects the effectiveness of existing public services. When people feel that they are not receiving fair, safe, and adequate services, this can lead to distrust of government institutions, trigger unhealthy water use practices, and increase the risk of public health problems. Furthermore, public perception is an important input in formulating policies based on real needs in the field. The government and service providers need to know for sure how the public assesses the clean water they consume, what the main obstacles they face are, and what their hopes and priorities are for improving these services. Without this data, the interventions carried out will tend to be technocratic and not touch the root of the problems felt directly by residents. This study has strong relevance to previous studies that discuss clean water services in urban areas. Fitriani, Ramadhan, and Astuti (2020) stated that the achievement of Minimum Service Standards (SPM) for clean water in urban areas still faces significant challenges, especially in ensuring equity and quality of service. Likewise, Lubis and Hermawan (2020) revealed that public perception of clean water services is greatly influenced by the reliability of distribution and the quality of water received. In this context, research conducted in Sei Raja Village strengthens these findings by adding empirical data that even though most residents live within <500 meters of a water source, they still face water quality issues such as colored, smelly, and tasteless water. This shows a gap between the existence of infrastructure and the perception of the suitability of the water consumed.

Furthermore, Purnama and Arifin (2019) highlighted the inequality of access to clean water in residential areas, which in many cases is caused by the limited capacity of the water supply system. This study fills an important gap by describing the community's experiences in more depth, not only in terms of accessibility but also expectations for future system improvements. Riswanto and Nugraheni (2021) even emphasized that water quality has a direct impact on people's perceptions of health and their level of trust in public services. By adopting a qualitative approach, this study describes dimensions of experience that are not captured through quantitative surveys alone, such as distrust of the quality of tap water even though it has gone through a treatment process. Therefore, this study is very important to bridge the gap between statistical data on clean water services and subjective experiences of the community in Sei Raja Village. The results of this study are expected to provide real contributions to improving the clean water service

system, supporting the achievement of basic service targets, and improving the quality of life and health of the community as a whole in Tanjungbalai City.

Identification of problems

Clean water is a very vital basic need for people's lives. However, in Sei Raja Village, Tanjungbalai City, based on SPM (Minimum Service Standard) achievement data, there are still a number of households that have not been served with adequate access to clean water. This village is included in Sei Tualang Raso District which has an unserved figure of 246 houses out of a total of 640 housing units (around 38.44%). This figure shows a significant gap between the target of clean water services and the realization in the field. In addition to the quantity of services, the quality of clean water received by the community is often questioned, both in terms of clarity, odor, taste, and continuity of water distribution. Public perception of the quality and access to clean water is very important to evaluate, because it can affect their satisfaction with public services, environmental health, and even trust in local government. This condition raises a number of critical questions related to the extent to which the community is satisfied with the available clean water services, what obstacles they experience, and how their perceptions can be used as a reference for improving services in the future.

Formulation of the problem

Based on the problem identification above, the problem formulation in this research can be formulated as follows:

1. How do the people of Sei Raja Subdistrict perceive the accessibility of available clean water services?
2. How do people perceive the quality of clean water they consume every day?
3. What are the obstacles faced by communities in obtaining clean and sustainable water?
4. What are the community's expectations regarding improving the quality and access to clean water services in the area?

LITERATURE REVIEW

2.1. Public Perception

Perception is an individual's interpretation of the stimulus received from the environment, which is influenced by experience, knowledge, and expectations. According to Lubis and Hermawan (2020), public perception of public services is an important indicator for assessing the success of the provision of basic services by the government. In the context of clean water services, public perception includes the dimensions of availability, affordability, quality, and continuity of services.

2.2. Clean Water Quality

The quality of clean water greatly determines the level of public health. The Indonesian Ministry of Health (2019) states that water that is suitable for consumption is water that is colorless, odorless, tasteless, and free from harmful substances and pathogenic microorganisms. According to Riswanto and Nugraheni (2021), public perception of water quality includes physical (color, odor, taste), chemical (content of harmful substances), and biological (cleanliness from germs) aspects.

2.3. Access to Clean Water

Access to clean water is defined by WHO (2020) as the availability of clean water for drinking and domestic needs within a reasonable distance and travel time. According to Purnama and Arifin (2019), the gap in access to clean water often occurs due to infrastructure inequality, limited distribution networks, and lack of investment in the water sector. In their study in urban areas, perceptions of water access were influenced by flow frequency, subscription fees, and distance to the water source.

2.4. Minimum Service Standards (SPM) for Clean Water

Based on PUPR Regulation No. 29 of 2018, the SPM for clean water services states that every citizen has the right to receive at least 60 liters of clean water per day per person. Research by Fitriani et al. (2020) shows that the achievement of SPM in various cities in Indonesia is still uneven, and public perception can be used as an important indicator to evaluate this achievement.

RESEARCH METHODS

3.1 Research Approaches and Types

This study uses a qualitative approach with a phenomenological study type. This approach is used to deeply understand the perceptions, experiences, and views of the community on the quality and access to clean water. According to Creswell and Poth (2018), phenomenological research aims to explore and describe the meaning of individual life experiences towards a particular phenomenon. In this context, the phenomenon studied is the community's experience in accessing and enjoying clean water.

3.2 Location and Time of Research

This research was conducted in Sei Raja Village, Sei Tualang Raso District, Tanjungbalai City, which was selected purposively because based on SPM achievement data, there are still households that have not been served adequately with clean water access. The research implementation time is scheduled for June 2025.

3.3 Research Subjects and Informants

The subjects in this study were the Sei Raja Village community who were direct users of clean water services. Informants were selected using purposive sampling techniques, namely the deliberate selection of informants with certain criteria, such as:

- 1) Residents who have lived in Sei Raja for at least 2 years
- 2) Have you ever had difficulty accessing clean water?
- 3) Have knowledge about the quality of water used daily

According to Yin (2020), purposive sampling is effectively used in qualitative research to select participants who best understand the phenomenon being studied.

3.4 Data Collection Techniques

Data was collected using several techniques:

- 1) In-depth Interview: conducted in a semi-structured manner with residents and community leaders.
- 2) Participatory Observation: directly observing the condition of clean water facilities and water usage patterns.
- 3) Documentation: collect related documents such as service reports, water network maps, and SPM data for Tanjungbalai City.

According to Creswell and Poth (2018), this combination of techniques is part of data triangulation, which is useful for increasing the validity and credibility of data.

3.5 Data Analysis Techniques

Data analysis was carried out using the model from Miles, Huberman, and Saldaña (2019) which consists of:

- 1) Data Reduction: sorting, simplifying, and selecting important data.
- 2) Data Presentation: arranging data in narrative and matrix form.
- 3) Drawing Conclusions and Verification: formulating main patterns and findings.

This process is carried out interactively and continues continuously until the data is declared saturated (data saturation).

3.6 Data Validity Test

To ensure the validity of the data, the following techniques are used:

- 1) Triangulation of sources and methods
- 2) Member checking (reconfirming the interview results with the informant)
- 3) Audit trail (documenting the research process transparently)

According to Moleong (2021), the validity of data in qualitative research is highly dependent on the researcher's accuracy and honesty in understanding the context and meaning of the participants.

RESULTS AND DISCUSSION

How do the people of Sei Raja Subdistrict perceive the accessibility of available clean water services?

Accessibility to clean water is one of the important indicators in assessing the quality of life of the community. In Sei Raja Village, community perceptions of access to clean water services show diverse views based on real experiences in meeting daily water needs. The community is generally aware that clean water is a vital need, but in reality the availability of these services is not evenly distributed and optimal. Based on interviews with several

residents who have lived in this area for more than two years, it was found that most of them still face challenges in obtaining clean water, both in terms of availability, affordability, and continuity of service. Many residents rely on private well water sources because PDAM services have not reached all areas, or if installed, the water discharge is very small and does not flow all the time. This is the main complaint of residents in densely populated areas where the water distribution infrastructure is inadequate.

Public perception also reflects concerns about water quality, especially during the rainy season, when well water changes color and smells. People who are classified as lower-middle class are even forced to use water from open wells or rainwater catchments for bathing and washing, even though they are aware that this is a health risk. Access to clean drinking water is also still a problem. Some residents have to buy refilled gallons of water regularly, which of course is an economic burden in itself. In terms of distance and travel time, residents who live in the outskirts of Sei Raja Village said that they have to travel quite far just to get clean water, especially when the government distribution channels are not flowing. This shows that accessibility is not only seen from the existence of water sources, but also the ease and practicality of obtaining clean water. However, there is also a positive perception from a small portion of the community who have received direct connections from clean water services and feel that the service is quite good, although they still hope for improvements in terms of flow speed and frequency of water distribution. Overall, the perception of the Sei Raja Village community regarding the accessibility of clean water services tends to be critical but realistic. They realize that the government has made efforts to build clean water infrastructure, but the hope for equal access, improved service quality, and affordable prices remains a collective aspiration that needs to be responded to seriously by the relevant parties.

How do people perceive the quality of clean water they consume every day?

Clean water quality is a key element in ensuring the health and well-being of the community. In Sei Raja Village, community perceptions of the quality of clean water they consume daily tend to vary, depending on the water source used and direct experience in its use. Most people stated that the water they consume does not fully meet the criteria for clean and drinkable water. Residents who rely on water from private wells or dug wells often complain about strong odors, non-neutral tastes, and the color of the water which is sometimes cloudy, especially after heavy rain or when the rainy season arrives. Several residents mentioned the presence of sediment and discoloration in the water, indicating the possible presence of iron or other contaminants. In addition, there are also concerns among the public about the long-term impacts of consuming unhygienic water. Residents are aware that poor water quality can trigger health problems such as skin diseases, diarrhea, and other digestive disorders. Therefore, many families choose to boil water before drinking or even buy gallon water as an alternative to drinking water, even though this increases household expenses. On the other hand, residents who get their water supply from PDAM have a slightly better perception. They consider that the water distributed tends to be cleaner and odorless. However, there are still complaints related to unstable water pressure, erratic flow frequency, and cloudy water at certain times. This raises concerns about whether the water has gone through adequate filtration and disinfection processes.

Public perception is also influenced by the lack of information provided by the government or water service providers regarding the quality of the water being distributed. Residents hope for transparency regarding water quality testing and regular socialization regarding clean water standards and how to handle household water so that it remains safe for consumption. In general, it can be concluded that public perception of the quality of clean water they consume every day is still filled with dissatisfaction and concern. Public expectations are for an increase in service quality, regular monitoring of water quality, and education regarding the importance of safe water consumption. This perception shows the importance of collaboration between local governments, clean water providers, and the community in realizing the fulfillment of basic rights to clean water that is adequate and sustainable.

What are the obstacles faced by communities in obtaining clean and sustainable water?

The availability of clean and sustainable water is a basic need for every individual. However, in Sei Raja Village, the community still faces various obstacles in meeting these needs optimally. These obstacles include technical, environmental, social, and institutional aspects. One of the main obstacles is the limited infrastructure of the clean water distribution network. Many households are not yet directly connected to the PDAM network, so they have to rely on drilled wells, dug wells, or even buy water from third parties. This condition causes the quality and quantity of water received to vary greatly, and does not always meet health standards. In addition, the distribution of water from PDAM is often uneven and inconsistent, especially in densely populated areas or in areas with high elevations. The quality of polluted groundwater sources is also a serious obstacle. Some residents complain about water that smells, is cloudy, and has an unnatural taste. This is caused by domestic and industrial waste pollution, low awareness of environmental sanitation, and the absence of a good drainage system. As a result, the water available

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in some areas is not only unfit for consumption, but also has the potential to endanger health. From an economic perspective, there are obstacles to the community's financial ability to access clean water with certain standards. Using refilled gallon water, installing household filters, or connecting to the PDAM network often requires a lot of money. This is an additional burden for low-income families, who ultimately continue to rely on less hygienic water sources. Another obstacle faced by the community is the lack of education and information regarding clean water management. Most residents have not yet gained sufficient understanding about the importance of water treatment before consumption, or how to protect water sources from pollution. This lack of knowledge increases the risk of waterborne diseases, as well as worsening environmental damage. Institutionally, weak coordination between local governments, PDAM, and the community has resulted in a lack of response to complaints or needs of residents regarding clean water. The absence of a participatory forum involving the community in decision-making regarding water provision and management exacerbates the inequality of access that occurs. Thus, the obstacles in obtaining clean water that is adequate and sustainable in Sei Raja Village are the result of a combination of various factors: ranging from uneven infrastructure, environmental pollution, economic constraints, to weak governance and community participation. Overcoming this problem requires an integrative collaborative approach, not only focusing on technical aspects, but also strengthening community awareness and the capacity of clean water service providers.

Table 4.1 Amount of Water Needed

Amount of Water Needed in Sei Raja	
< 60 Liters/day	11%
60 - 120 Lt/day	35%
> 120 Lt/day	54%
Distance	
< 500 meters	81%
> 500 meters	19%
Colored	
yes	87.33%
No	12.67%
Smells	
yes	63.07%
No	36.93%
Taste	
yes	85.06%
No	14.94%

The field findings reflected in Table 4.1 show that the Sei Raja Village community has diverse needs and perceptions regarding the access and quality of clean water that they use every day. This data reflects real conditions that still require serious attention from the local government and related agencies. In terms of daily water needs, 54% of the community needs more than 120 liters of water per day, while 35% need between 60-120 liters, and only 11% need less than 60 liters per day. This figure shows that the majority of residents have quite high domestic activities and demand the availability of water in large quantities, both for drinking, cooking, bathing, washing, and sanitation purposes. This high need shows the importance of continuity and the availability of a stable water supply, and shows that the clean water distribution system must be able to meet the quite large demand from the community. In terms of accessibility, 81% of residents said they got clean water from sources less than 500 meters from their homes. This indicates that physically, most people have fairly close access to water sources. However, another 19% still have to travel more than 500 meters, indicating inequality in access in some areas of Sei Raja. This can have a direct impact on the time and energy that must be spent to obtain water, especially for vulnerable groups such as the elderly,

children, or women. Although the access distance is mostly close, the quality of the water obtained is still very worrying. As many as 87.33% of people reported that the water they use is colored, which is an early indicator of pollution or contamination. In addition, 63.07% said that the water also smells, and 85.06% said that the water has an abnormal taste or flavor. These findings indicate that although in terms of quantity and distance the water can be accessed, in terms of quality the clean water does not meet the standards for consumption. The problem of color, odor, and taste in water indicates the possibility of contamination from the water source or from an unhygienic distribution system. This is a serious problem because water that is not clear, smelly, and tasteless is not only unfit for consumption but also risks causing health problems such as digestive disorders, skin diseases, or waterborne diseases. From this data analysis, it can be concluded that the main challenge is not merely physical access to water, but more so the quality of clean water that does not meet standards. Therefore, improvements to the water treatment system, supervision of water sources, and public education about the importance of maintaining water quality are urgently needed. A comprehensive approach, both from a technical, social, and institutional perspective, needs to be taken immediately so that the people of Sei Raja Village can enjoy clean water that is decent, safe, and sustainable.

What are the community's expectations regarding improving the quality and access to clean water services in the area?

Based on the results of interviews and field observations, the Sei Raja Village community showed high hopes for improving the quality and access to more appropriate and sustainable clean water services. This hope arose from the daily experiences of the community who still face various obstacles, both in terms of quantity, distance, and the physical quality of water that does not meet household consumption standards. First, the community hopes that the quality of clean water can be improved, especially in terms of clarity, freedom from odors, and strange tastes. As reflected in previous data, more than 85% of residents complained about water that tasted, 63% complained about unpleasant odors, and 87% stated that the water was colored. This illustrates a fairly serious concern about the condition of the water consumed daily, which is not only uncomfortable, but also raises concerns about long-term health impacts.

Second, the community wants more equitable and easily accessible access to clean water, especially for groups living on the outskirts of Sei Raja Village. Although most residents (around 81%) already get water from sources less than 500 meters away, there are still 19% who have to travel further to meet their water needs. They hope that there will be the construction or expansion of a water distribution network that reaches all areas of the village fairly. In addition, the community also expressed their desire for the government, both at the city and village levels, to be more active in improving water infrastructure, such as repairing leaking pipes, increasing water storage capacity, and managing water sources more hygienically. This hope reflects the community's desire that water management not only provides, but also ensures that the water that reaches residents' homes meets national clean water standards.

The community also hopes for transparency and good communication between the government and residents, especially regarding the management of clean water services. They want to be involved in the planning and evaluation process so that the solutions designed truly answer real needs in the field. Finally, the community hopes for an outreach and education program on the importance of maintaining environmental cleanliness, saving water, and ways to maintain good sanitation. With a better understanding, the community believes that collaboration between residents and the government can accelerate the achievement of adequate access to clean water for all levels of society. Thus, the community's expectations for improving the quality and access to clean water in Sei Raja Village are very strong and rational. They not only demand better services, but also show their readiness to be actively involved in the process of developing fair, equitable, and sustainable clean water services.

CLOSING

Conclusion

Based on the results of the analysis and field findings, it can be concluded that:

1. Public perception of clean water quality in Sei Raja Village is still negative. Most people feel that the water they consume daily does not meet cleanliness standards because it still contains unusual colors, odors, and tastes.
2. Access to clean water has reached most areas, but there are still groups of people who have to travel more than 500 meters to get water, resulting in inequality in services.
3. The main obstacles in obtaining clean and sustainable water are limited infrastructure, quality of water sources, lack of supervision of water management, and lack of socialization from the government to the community.

4. The community hopes for improved clean water services, including in terms of water quality, expanding distribution coverage, improving infrastructure, and community involvement in monitoring and planning water management policies.

Suggestion

1. The Tanjungbalai City Government, through related agencies, needs to accelerate the improvement of clean water infrastructure and ensure that the quality of water distributed meets the standards of the Ministry of Health.
2. It is necessary to conduct a comprehensive evaluation and expansion of the clean water service network so that all residents, including those on the outskirts of Sei Raja Subdistrict, have equal access to water.
3. Socialization and education regarding the importance of maintaining water quality, sanitation, and community participation in clean water management need to be increased periodically.
4. The government is encouraged to formulate participatory-based policies, which involve the community in the planning and monitoring process of water services, so that clean water services are more responsive to the needs of residents.

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