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SERVICES OF THE TIRTA LINGGA REGIONAL DRINKING WATER COMPANY IN OVERCOMING THE CLEAN WATER CRISIS IN SINGKEP DISTRICT, LINGGA REGENCY

Muhammad Fitra Hardinata[1], Novi Winarti[2], Eki Darmawan[3]
Government Science Study Program, Faculty of Social and Political Sciences,
Raja Ali Haji Maritime University, Indonesia
Email: muhammadfitra815@gmail.com

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Abstrak

The clean water crisis remains a major problem in Lingga Regency due to limited raw water sources, the island's geographical conditions, and the uneven distribution network. PDAM Tirta Lingga plays a crucial role in providing clean water, particularly in Singkep District, which frequently experiences distribution disruptions. This study aims to analyze PDAM Tirta Lingga's services in addressing the clean water crisis, focusing on effectiveness, responsibility, and accountability. The study employed a qualitative descriptive approach through observation, interviews, and documentation, with data analysis utilizing Agus Dwiyanto's (2002) theory. The results indicate that PDAM Tirta Lingga's services are not yet optimal in terms of effectiveness, characterized by uneven water distribution, unstable flow, and water quality that does not consistently meet standards. However, in terms of responsibility and accountability, PDAM Tirta Lingga is considered quite good through its crisis management efforts and transparent management and reporting. Efforts to regulate flow times and distribute water using tankers are only temporary and have not been able to meet community needs sustainably, so improvements in infrastructure and water resource capacity are needed.

INTRODUCTION

Indonesia is one of the most populous countries in the world, even making it into the list of the 10 most populous countries in 2024. Ranked fourth, Indonesia ranks just below India, China, and the United States. According to data, Indonesia's population in 2023 was recorded at 278.6 million. Meanwhile, according to the Central Statistics Agency (BPS), by mid-2024, that number will increase to 281.6 million. Population

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growth is a significant indicator because it plays a potential role in production activities, both at the household and corporate levels (Aritonang et al., 2023). Population growth will affect the amount of basic necessities needed in a region, one of which is clean water.

Water is the source of life for living things, especially humans, who thrive on a variety of basic needs. Water is a primary need for daily activities such as drinking, cooking, bathing, and even industrial processing. Therefore, water's function extends beyond economic functions to social ones. This social function is closely linked to the health, clarity, and cleanliness of water, making it crucial for all parties to understand it to maintain and improve public health.

The Regional Drinking Water Company (PDAM) is a regionally owned company that distributes clean water to the public. PDAM was established by the government to provide clean water, with an organizational structure centered on the local government. PDAM provides a variety of services to satisfy customers, including punctuality, employee competence, and security (Daerah et al., 2023).

Clean water is so important that providing access to it is one of the targets of sustainable development (Sustainable Development Goals). Most PDAM customers still do not receive clean water services that meet the requirements for quality, quantity, and continuity. Regarding the issue of continuity or operating hours of clean water services, many PDAMs are still unable to operate water services 24 hours a day because PDAMs have not been able to implement energy efficiency measures, so services are still provided in shifts (Kanaf et al., 2022). Another problem related to clean water services is the lack of infrastructure owned by PDAMs, where water distribution does not flow for several days due to broken PDAM water pipes, the small diameter of the pipes to flow water, in addition to many public complaints about pipes that have been installed but the water discharge that flows water is only small and does not match the water usage needed by the community.

The clean water crisis is not solely triggered by natural factors, but is also related to limited water management infrastructure. Distribution networks that have not fully reached all areas, limited water treatment capacity, and inadequate water storage facilities have resulted in less than optimal clean water services. Population growth, the rise of organizations, and the development of economic activity have further increased the need for clean water, thereby increasing pressure on water sources. To address this problem, various efforts have been undertaken by relevant parties, particularly the Tirta Lingga Water Company (PDAM) as the agency responsible for providing clean water to the community. PDAM continues to strive to increase water treatment capacity, expand its distribution network, utilize alternative sources such as drilled wells and rainwater reservoirs, and repair damaged or degraded infrastructure.

This study aims to analyze the services provided by PDAM Tirta Lingga in addressing the clean water crisis in Singkep District, Lingga Regency, using indicators of effectiveness, accountability, and responsibility. This research is important to determine the extent to which PDAM Tirta Lingga's services meet the community's clean water needs, especially during crisis situations.

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Service Concept

The term "service" comes from the word "layan," meaning to help provide everything another person needs for the act of serving. Essentially, every human being needs service; in extreme cases, it can be said that service is inseparable from human life (Sawir, 2020). Service is an activity whose results are intended to meet the needs of others, whether individuals, groups, or the community. Service is a form of service activity carried out by government institutions at the central, regional, or state-owned or regional enterprises in the form of goods or services to fulfill the interests of the community and implement statutory provisions (Ferine & Juniarti, 2022).

Public service is the responsibility of the government and is implemented by government agencies, both at the central and regional levels. The public is increasingly open to criticizing public services, therefore, the substance of administration plays a significant role in regulating and directing all activities of service organizations to achieve a goal (Mustanir, 2022). Service quality is a key factor in determining the success of an organization, both in the public and private sectors. Quality service not only influences customer satisfaction but can also create loyalty, enhance the organization's image, and provide a sustainable competitive advantage. Attention to service quality has become a top priority in implementing organizational management strategies (Ambas et al., 2025).

The term PDAM is certainly familiar to the public. An abbreviation for Regional Drinking Water Company (Perusahaan Daerah Air Minum), PDAM is a form of Regionally-Owned Enterprise (BUMD) engaged in the distribution of clean water for public needs. Referring to information from the official website of the Supreme Audit Agency (BPK), PDAM operates at the provincial, district, and city levels throughout Indonesia. As a regionally-owned company, PDAM is tasked with providing clean water services and is under the supervision and control of regional executive and legislative bodies. It is important to understand that although the name includes the word "drinking water," it does not mean that the water distributed by PDAM is automatically suitable for direct consumption without prior filtering or boiling (Idris, 2023). Ownership of PDAM rests with the regional government, as this company is funded entirely or primarily by capital from the regional government. Therefore, PDAM is classified as a Regionally-Owned Enterprise (BUMD). The regional government plays a crucial role in supporting the operation and development of PDAM. This involvement includes setting clean water tariffs, appointing management staff, and developing various policy strategies related to the company's direction and management.

Clean Water Concept

Clean water is water that meets certain standards and is suitable for various daily needs, such as drinking, cooking, washing, and other household activities. However, to ensure its safety, the water should be boiled or treated first. The need for clean water can be measured by considering basic daily human needs, making its availability crucial for achieving a healthy and decent quality of life (Djana M, 2023). According to Satoto and Yogi in Utami (2023), water is a necessity that cannot be postponed. Humans need water, especially for drinking. Similarly, Asmadi et al. state that the need for clean water is the amount of water needed to meet the needs of daily life activities such as bathing, bathing, cooking, planting plants, and so on.

Clean water is a concept of managing and providing water resources efficiently, sustainably, and at an affordable cost, making them accessible to all levels of society. The main objective of this concept is to ensure the availability of clean water that is safe, healthy, and suitable for consumption to meet daily needs, such as drinking, cooking, washing, and other household activities. The provision of clean water plays a vital role in improving the quality of life of the community and supporting the achievement of the Sustainable Development Goals (SDGs), particularly target 6, which emphasizes the importance of the availability and management of clean water and sustainable sanitation for all (Elvania, 2025).

Clean water is a type of water-based resource that has good quality and is generally used by humans for various purposes, both for consumption and to support daily activities. Clean water is not only used for drinking, but also plays a vital role in household activities such as cooking, washing, bathing, as well as in agriculture, industry, and various other public facilities. Furthermore, clean water is a key component in rice field irrigation systems, drinking water treatment, and water sanitation, which play a vital role in supporting environmental health and cleanliness (Simanjuntak et al., 2021). The availability of surface water is currently a major concern because more and more regions are experiencing decreasing water discharge caused by climate change, environmental degradation, deforestation, and increasing human needs that are not balanced by sustainable water resource management. This condition makes surface water increasingly scarce and vulnerable to pollution, both from domestic waste and industrial activities (Sinatriya & Nugroho, 2022).

The Concept of Clean Water Crisis

The water crisis is one of the most pressing global environmental issues of the modern era, as it directly impacts human survival, ecosystem sustainability, and the social and economic stability of a region. Amidst increasing pressure on natural resources due to population growth, industrialization, and climate change, providing clean water is becoming an increasingly complex and difficult challenge to overcome, particularly in developing countries with limited infrastructure and water resource management capacity (Fransiska et al., 2024). Various factors contribute to the increasing global demand for water, including rapid population growth, uncontrolled urbanization, the expansion of industrial and agricultural activities, and changes in modern consumption patterns. Climate change exacerbates these conditions by altering rainfall patterns, increasing the frequency of droughts, and reducing the availability of clean water sources in many regions (Lufira et al., 2025).

A clean water crisis is a situation where the availability of clean water is insufficient to meet basic human needs such as drinking, cooking, bathing, and sanitation. This crisis can occur locally, regionally, or globally, and poses a serious threat to health, the environment, and socio-economic development. The water crisis has not only occurred but is also ongoing and shows a growing trend over time. This phenomenon is influenced by various factors that make the water issue a concern for all humanity. According to Biswas (1997) in Junivieri et al. (2021), there are five main factors causing the water crisis to become increasingly widespread and deepen globally: limited availability of clean water; water as a basic human need; exploitation and loss of water resources; increasing water pollution; and increasingly significant social and environmental impacts.

Unsustainable water resource management has led to water scarcity in many

regions, particularly during the dry season or periods of prolonged drought. Geographical factors, such as the island nation and limited raw water sources, exacerbate this problem. Developing environmentally friendly water resources is no longer merely a topic of discussion, but rather an integral and essential part of a sustainable and environmentally conscious development strategy. Conservation efforts, efficient water use, and the use of appropriate technology are key to overcoming the future clean water crisis.

METHOD STUDY

This study uses a qualitative approach with descriptive methods. The qualitative approach was chosen because this study aims to understand in-depth the services of PDAM Tirta Lingga in addressing the clean water crisis in Singkep District, Lingga Regency. The object of the study is the Tirta Lingga Regional Drinking Water Company which has a major role in clean water management. The research location was in Singkep District with the main focus on clean water problems and uneven water distribution. Data collection techniques were carried out through observation, interviews, and documentation. Data analysis used the Miles and Huberman model which includes data reduction, data presentation, and drawing conclusions.

Informants in this study were determined using purposive sampling, selected based on specific considerations, including knowledge, experience, and direct involvement in clean water services in Singkep District. Informants consisted of internal staff at PDAM Tirta Lingga and community members who use clean water services. The following is a list of informants interviewed in this study:

Table 1. Research Informants

Informant	Amount
Head of General Affairs and Personnel of Tirta Lingga Regional Drinking Water Company	1 Person
Head of Collection and Field Section	1 Person
Clean Water Recipient Communities	5 People
Total	7 People

Source: Researcher Processed Data (2025)

RESULTS AND DISCUSSION

Effectiveness

The services of the Tirta Lingga Regional Drinking Water Company in addressing the clean water crisis in Singkep District, Lingga Regency have not been running optimally. Based on the results of interviews with the Head of General Affairs and Personnel of the Tirta Lingga Regional Drinking Water Company (Mr. Nasrullah, A.md), the main target is to ensure that the people of Lingga Regency have access to clean water that is decent, affordable, and sustainable. PDAM also targets a significant increase in service coverage, reduction in water loss through technological innovation and efficient management, and continuous improvement of service quality despite the limited conditions of raw water resources due to geographical challenges and tropical climate.

The biggest obstacle faced is the availability of raw water, especially during the long dry season. Furthermore, the aging condition of the pipeline network in some areas

also affects the optimization of water distribution. Under normal conditions, water distribution can still operate, although in some areas flow hours must be regulated. In abnormal conditions, such as a long dry season, the Regional Water Company (PDAM) limits distribution and distributes clean water through tankers. The effectiveness of Perumda Air Minum Tirta Lingga's service is measured by the smoothness of overall water distribution, with a target of reducing technical disruptions such as pipe leaks, pump outages, or reservoir sedimentation. A fast response time to customer complaints, such as the target of handling leak reports in less than 4 hours via the hotline or app, is an important indicator of service effectiveness.

Accountability

PDAM Tirta Lingga's accountability is demonstrated through a formal commitment to be responsible for public service decisions and actions. PDAM maintains financial reporting, asset management, and routine operational reports that are audited in accordance with regulations and submitted periodically to the local government and management at the end of each month. These reports cover clean water production achievements, customer satisfaction levels, cost control, and disruption risks, enabling rapid evaluation and policy development.

Transparency is strengthened through rapid announcements on social media platforms such as WhatsApp, Facebook, and Instagram regarding blackout schedules, network repairs, water-saving tips, and two-way interactions. Operational information and official announcements from PDAM Tirta Lingga are typically disseminated quickly through social media to reach the wider public, informing them of temporary water outage schedules, network disruption repair status, water-saving tips during the dry season, or bill payment promotions. Active citizen participation through reporting leaking pipes, cloudy water, or broken meters strengthens self-monitoring and rapid response before escalating into mass complaints. This accountability mechanism is effective in supporting internal governance and public collaboration, but requires increased depth of communication to maximize transparency and stakeholder trust.

Responsibility

The Tirta Lingga Water Company (PDAM) demonstrated a high level of responsibility during the water crisis in Singkep, which experienced a drought due to the Rembang Dam. The company adjusted distribution hours, optimized available water sources, and distributed clean water using water tankers to the most affected areas. Any reports of leaks or pipe damage were promptly followed up with repairs by the field team, according to the level of urgency.

PDAM proactively conducts routine checks on the installation of intake pumps, reservoirs, and distribution pipelines to prevent disruptions to clean water services to customers. This activity is carried out weekly by the technical team. Customer complaints from PDAM Tirta Lingga are usually responded to quickly by the customer service team via hotline, WhatsApp, or the reporting application. However, sometimes longer wait times occur in the event of major disruptions such as damage to main pipes due to landslides or dry season water crises that require cross-unit coordination and extensive resource allocation. Overall, PDAM's operational accountability has proven robust thanks to synergy with the community that strengthens self-monitoring, but requires increased emergency response capacity and specific schedule adjustments to more optimally mitigate the impact of seasonal crises.

CONCLUSION

Based on the research results, the Tirta Lingga Regional Drinking Water Company's (PDAM) service in addressing the clean water crisis in Singkep District has not been fully implemented. Of the three indicators used, some are performing well, but others still require improvement. This is evident in several aspects of implementation that still face various challenges.

The research results show that the Tirta Lingga Regional Drinking Water Company's (Perumda Air Minum Tirta Lingga) service in addressing the clean water crisis in Singkep District has not been optimal. In terms of effectiveness, services are still hampered by limited raw water sources, the geographical location of the archipelago, and an inadequate distribution network. This often results in distribution disruptions, low water discharge, and even blackouts during the dry season. Efforts to regulate flow times and distribute water using tankers are only temporary and have not been able to meet community needs sustainably.

In terms of accountability, PDAM Tirta Lingga has conducted regular financial and operational reports and disseminated information to the public through various media, although the quality and clarity still need to be improved. Meanwhile, in terms of responsibility, PDAM has demonstrated quite good responsibility through responding to public complaints, network repairs, and clean water distribution to affected areas. However, handling large-scale disruptions still requires more time due to limited resources. Overall, PDAM Tirta Lingga's services are considered to be running well, but not yet fully effective in addressing the clean water crisis in a sustainable manner.

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