Analysis of Realization of Local Original Income of Drinking Water Management UPT SPAM Dharmasraya Regency, West Sumatra Province

Ratna Budianti[1], Rini Subekti[2]

{042360924@ecampus.ut.ac.id[1], bektirini@ecampus.ut.ac.id[2]}

Student of Accounting Study Program, Faculty of Economics and Business, Universitas Terbuka, Indonesia[1], Lecturer of Accounting Study Program, Faculty of Economics and Business, Universitas Terbuka, Indonesia[2]

Abstract. The availability of clean water is a major problem faced by local governments in Indonesia, including Dharmasraya Regency. In this regard, this study analyzes the differences in targets and realization of Local Revenue (PAD) in drinking water management based on cases at the UPT SPAM Dharmasraya Regency. The purpose of this analysis is to determine the factors that influence realization and provide recommendations in order to improve the performance of drinking water management, using a qualitative approach with a case study method. Data were collected through in-depth interviews, direct observation, and documentation studies. From the results of the analysis, several factors including the high level of water pipe leakage, the number of customers who did not reach the target, and the low level of billing from customers were identified as the causes of the gap in Local Revenue (PAD). From these findings, strategies that can be carried out to improve performance in the information management system are the implementation of information system development, increasing data accuracy and completeness, and utilizing information technology. Leakage management, public promotion and awareness, area mapping, improving the billing system, and better quality human resources are part of the PAD agenda. This study focuses on identifying and understanding the factors that cause differences and providing recommendations to improve the performance of drinking water management and PAD in Dharmasraya Regency.

Keywords: Drinking water management, Local Original Income, Information system, Pipeline network leaks

1 Introduction

One of the main problems faced by local governments in Indonesia, especially Dharmasraya Regency, is the availability of adequate clean water. This is confirmed by Djana, Miftahul [1]. The 2020-2024 National Medium-Term Development Plan notes that the provision of access to clean and safe drinking water nationally has not been met in the previous development period; therefore, optimization is still needed [2].Various challenges in the provision of clean drinking water are caused by weak governance and institutional structures as well as limited commitment and capacity at the local government level. The Technical Implementation Unit (UPT) of the Drinking Water Supply System (SPAM) of Dharmasraya Regency, which is under the auspices

ISBEST 2024, September 19, South Tangerang, Indonesia

DOI 10.4108/eai.19-9-2024.2354184

of the Public Works and Spatial Planning Service of Dharmasraya Regency, is the implementing unit for drinking water management in the area. In recent years, the SPAM UPT of Dharmasraya Regency has faced significant problems in terms of the target of Regional Original Income (PAD) for drinking water management and the realization that has been achieved. Many PDAMs in Indonesia experience budget deficits due to the low drinking water tariffs set compared to the operational and investment costs that must be incurred[2]. An in-depth evaluation of this issue is needed to ensure sustainable water availability and support optimal regional development. Sanitation together with environmental conditions and the availability of clean water is one of the important things in realizing the level of public health which has an impact on social and economic development. Improvements in sanitation, the environment and clean water will substantially reduce the level of morbidity and severity of various diseases so that it can improve the quality of life of the community, especially children in developing countries [2]. This is increasingly important with the potential for increasing Regional Original Income that can be obtained from efficient water management. Sustainable management of water resources in regions. This is the government's responsibility, in accordance with the provisions of Article 33 paragraph 3 of the 1945 Constitution of the Republic of Indonesia. The article states that the state has the right to control water resources, and its use must be for the prosperity of the people (Decision of the Constitutional Court of the Republic of Indonesia, Number 58/PUU-VI/2008). Data from the financial report of the Public Works and Spatial Planning Service of Dharmasraya Regency for 2019-2023 shows that in the last five years, there has been a discrepancy between the target of Regional Original Income (PAD) and the realization of Regional Original Income (PAD). The following table presents the Target and Realization of drinking water management levy revenues from UPT SPAM in Dharmasraya Regency.

Table 1. Target and Realization of Drinking Water Management Levy for Fiscal Year 2019 to 2023 (In Rupiah)

Year	Target	Realization	Gap	Percentage
2019	600,000,000.00	618,556,100.00	18,556,100.00	103.09
2020	700,000,000.00	641,538,800.00	(58,461,200.00)	91.65
2021	700,000,000.00	431,650,000.00	(268,350,000.00)	61.66
2022	700,000,000.00	302,748,000.00	(397,252,000.00)	43.25
2023	700,000,000.00	307,797,400.00	(392,202,600.00)	43.97

Source: Public Works and Spatial Planning Office of Dharmasraya Regency, 2024 [10]

From 2019 to 2023, the target for Regional Original Income (PAD) from drinking water management ranges from 600-700 million rupiah per year. However, PAD realization tends to decline from 103.09% in 2019 to only 43.97% in 2023. This indicates a widening gap between the target and realization of PAD from drinking water management (Public Works and Spatial Planning Agency, 2019-2023). Based on this description, the gap between the target and realization of drinking water management at the Dharmasraya Regency SPAM UPT occurred because the realization of Regional Original Income (PAD) in 2021-2023 was far below the target, indicating a threat to the availability of clean water and sustainable development. This study aims to provide a positive contribution to improving drinking water management at the Dharmasraya Regency SPAM UPT by analyzing PAD realization, identifying factors causing differences in targets and realizations, and providing recommendations to improve the performance of drinking water management in the area.

2 Methods

This study uses a qualitative approach with a case study method regarding the realization of Local Original Income (PAD) from drinking water management at the UPT SPAM Dharmasraya Regency. Qualitative methods allow researchers to study the problem comprehensively, collect data from various sources, and study the perspectives and experiences of stakeholders involved [3]

Data were collected through interviews with parties involved in drinking water management at the UPT SPAM Dharmasraya Regency. Direct observation of drinking water management practices at the UPT SPAM Dharmasraya Regency and document studies of reports, data, and documentation related to drinking water management at the UPT SPAM Dharmasraya Regency.

Data analysis was carried out thematically (thematic analysis) to identify patterns, themes, and factors that cause gaps between targets and PAD realization. Comparative analysis to compare drinking water management practices at the UPT SPAM Dharmasraya Regency with existing best practices or standards. SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis to identify strengths, weaknesses, opportunities, and threats related to drinking water management at UPT SPAM Dharmasraya Regency.

A qualitative research approach with a case study method, data collection techniques through in-depth interviews, direct observation, and document studies, as well as data analysis techniques using thematic, comparative, and SWOT analysis are used to comprehensively study the problem of PAD realization from drinking water management at UPT SPAM Dharmasraya Regency. The aim is to identify factors that influence the gap between PAD targets and realization, and to provide recommendations for improving the information management system and achieving PAD targets.

3 Result and Discussion

Factors Causing the Gap between Target and Realization of Local Original Revenue (PAD)

a. High Level of Pipeline Leakage
   The level of pipeline leakage between 25-30 percent is one of the main factors causing the difference between the target and realization of PAD. This indicates a problem in the pipeline infrastructure that needs to be addressed immediately.
b. Number of Customers Who Did Not Reach Target
   The following is a table of the number of drinking water management customers of UPT SPAM in Dharmasraya Regency in 2019-2023

Table 2. Number of Drinking Water Management Customers of UPT SPAM Dharmasraya Regency in 2019-2023

No	Year	Target Costumers	Installed Costumers
1	2019	1,500	1,473
2	2020	1,500	1,488
3	2021	1,500	1,462

4	2022	1,500	1,465
5	2023	1,500	1,465

Source: UPT SPAM, Public Works and Spatial Planning Office of Dharmasraya Regency, 2024 [9]

Although the number of new customers increased from 2019-2020, this number is still below the target. In 2021-2023 the number of customers is decreasing from the targeted number of customers.

c. Low Collection Rate

The table below presents the condition of drinking water management receivables of UPT SPAM in Dharmasraya Regency in 2023

Table 3. Drinking Water Management Customer Receivables of UPT SPAM Dharmasraya Regency Year 2023

Year	Receivables Value as of December 31, 2022	Revenue 2023	Receivables Collected 2023	Receivables Balance as of December 31, 2023
1	2	3	4	5
2019	78.859.900		-	78.859.900
2020	109.537.400		-	109.537.400
2021	125.501.500		574.900	124.926.600
2022	209.885.400		54.421.400	155.464.000
Jan - Aug 2023	-	379.022.800	228.260.100	150.762.700
Sept - Nov 2023	-	141.470.400	13.837.000	127.633.400
December 2023	-	46.134.600	-	46.134.600
	523.784.200	**566.627.800**	**297.093.400**	**793.318.600**

Source: UPT SPAM Public Works and Spatial Planning Agency, Dharmasraya Regency, 2024 [10]

From the table above, it can be seen that the realization of collection of receivables before the current year is very low, which is 54 million from the total receivables of 523 million. In 2023, revenue from drinking water management of 566 million can only be collected 242 million. A stricter billing system with clear sanctions for customers who do not pay is expected to increase the billing rate. Increasing PAD requires effective management and an efficient billing system [5]

Effective Strategies to Improve Information Management Systems

a. Building an Integrated Information System

An integrated information system is very important in drinking water management. Implementation of a good information management system can increase efficiency and effectiveness in drinking water management [6]

b. Improving Data Accuracy and Completeness
   Data accuracy and completeness are the foundation of effective information management. Digital meter recording technology and computerized billing systems can increase efficiency and accuracy in data management [6,7]
c. Utilization of Information Technology
   Utilizing information technology such as digital meter recording systems and computerized billing systems can increase efficiency and accuracy in data and information management. The use of information technology can increase operational efficiency and reduce human error in drinking water management [8]

Efforts to Achieve Regional Original Revenue (PAD) Targets

a. Pipeline Leakage Control
   Controlling pipeline leakage is one of the important steps to reduce water loss and increase revenue from drinking water levies.
b. Increasing Promotion and Public Awareness
   Increasing promotion, collaboration with local community leaders, and social media can be used to increase public awareness of the importance of using clean water from the SPAM pipe network. Increasing public awareness can have a positive impact on the use of clean water and contribution to [8].
c. Mapping of Areas and Planning of New Pipelines
   Mapping of areas and planning of new pipelines strategically is very important to increase the number of customers and generate greater revenue from drinking water levies. Careful planning and adequate infrastructure are the keys to efficient and effective water management [5]
d. Improving the Quality of Human Resources
   Providing regular training and competency development foru employees, especially in the areas of asset management, operations, and customer service, can improve drinking water management properly. The quality of human resources is an important factor in good water management [8]
e. Improvement of Billing System
   A better billing system can ensure that expected revenues are realized on time, reduce arrears, and improve cash flow. A good billing system is the key to increasing regional income [5]

> The results of the study show the importance of good water management for sustainable regional development. Increasing PAD results from drinking water management can be achieved through controlling leaks, increasing the number of customers, and improving the billing system. The use of information technology and the implementation of an integrated information system can assist in better management and increase operational efficiency. Increasing public awareness and the quality of human resources is also very important to achieve targets.

4 Conclusion

Drinking water management at UPT SPAM Dharmasraya Regency faces problems such as high levels of pipe network leakage, the number of customers that do not reach the target, and low billing rates, which cause differences between the target and the realization of PAD. To overcome this problem, it is necessary to improve the information management system through an integrated information system, increase data accuracy and completeness, and utilize information technology. In addition, other efforts such as leak control, increasing public promotion and awareness, regional mapping, planning new pipe networks, and improving the quality of human resources are also needed. By implementing strategies and cooperation from all related parties, drinking water management can be improved and have a positive impact on PAD and sustainable development.

References

[1] Aslichati, L., Prasetyo, B., & Irawan, P. (2023). Metode Penelitian Sosial. Universitas Terbuka.

[2] Bappenas, K. P. (2019). *Rancangan Teknokratik Rencana Pembangunan Jangka Menengah Nasional 2020-2024.* Bappenas, Kementerian PPN.

[3] Sulistyawati. (2023). Buku ajar metode penelitian kualitatif. Banguntapan, Bantul, Yogyakarta. [9] Gunawan, A. (2019). *Peningkatan Kualitas Sumber Daya Manusia di Bidang Pengelolaan Air Minum.* Bumi Aksara.

[4] Rahmawati, L. (2020). Implementasi Teknologi Digital dalam Pengelolaan Air Minum. Pustaka Pelajar. [6] Mardiana, S. (2020). *Sistem Pengelolaan Informasi dalam Pengelolaan Air Minum.* Alfabeta.

[5] Susilawati, A., et al. (2020). Efektivitas Sistem Penagihan dan Peningkatan Pendapatan Asli Daerah (PAD). Airlangga University Press. [8] Saraswati, R. (2020). *Strategi Promosi dan Kesadaran Masyarakat dalam Penggunaan Air Bersih.* UMM Press.

[6] Mardiana, S. (2020). Sistem Pengelolaan Informasi dalam Pengelolaan Air Minum. Bandung: Alfabeta.

[7] Wijaya, A. F., et al. (2020). Perancangan sistem informasi manajemen untuk pengelolaan air minum di Kota Surabaya. *Jurnal Teknologi Informasi*, 9(1).

[8] Mardiana, S. (2020). Sistem Pengelolaan Informasi dalam Pengelolaan Air Minum. Bandung: Alfabeta.

[9]Dinas Pekerjaan Umum dan Penataan Ruang. (2023). *Laporan Keuangan Audited. Tahun 2023.*

[10]UPT SPAM Dinas Pekerjaan Umum dan Penataan Ruang. (2023). *Laporan Piutang. Tahun 2023.*