

Feasibility analysis of rates of PDAM, South Halmahera district, North Maluku based on full cost recovery

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Abstract

This study aims to conduct an analysis of the feasibility of PDAM tariffs in South Halmahera Regency based on full cost recovery. In 2018, the average water tariff per m³ was IDR 3,046.41, or 53.67% of the essential cost of water per m³ of IDR 5,676.60. Whereas for 2019, the average water tariff per m³ is IDR 3,112.35, or 52.02% of the crucial cost of water per m³ of IDR 5,982.96. In 2018 and 2019, the selling price of water was still below the basic price of water, so the applicable average tariff did not fully cover costs (full cost recovery). This happened because it used the 2006 water tariff. PDAM Halmahera Selatan Regency has never proposed a new tariff policy. It has yet to evaluate its tariff policy every year because it focuses on its social role in serving the community's water supply and expanding service coverage. PDAM has also never received operational assistance subsidies from the South Halmahera Regency Government.

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Public interest statements

This study proposes tariff changes that can cover total costs (full cost recovery) for the Regent of South Halmahera Regency. If the tariff proposal is not approved, the PDAM should seek operational assistance subsidies to cover the full costs from the South Halmahera Regency Government. If the two efforts are unsuccessful, the PDAM must carry out cost efficiencies to reduce the high operating expenses.

Keywords: Water supply, full cost recovery, tariff policy

Paper type: Case Study

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Abstrak

Tujuan dari penelitian ini adalah untuk melakukan Analisis kelayakan tarif PDAM di Kabupaten Halmahera Selatan berdasarkan full cost recovery. Pada tahun 2018 rata-rata tarif air per m³ sebesar Rp3.046,41 atau 53,67% dari biaya dasar air per m³ sebesar Rp5.676,60. Sedangkan untuk tahun 2019 rata-rata tarif air per m³ sebesar Rp3.112,35 atau 52,02% dari biaya pokok air per m³ sebesar Rp5.982,96. Pada tahun 2018 dan 2019, harga jual air masih berada di bawah biaya dasar atau harga dasar air sehingga rata-rata tarif yang berlaku belum mampu menutup biaya sepenuhnya (full cost recovery). Hal ini terjadi karena menggunakan tarif air tahun 2006. PDAM Kabupaten Halmahera Selatan tidak pernah mengusulkan kebijakan tarif baru dan tidak melakukan evaluasi kebijakan tarif setiap tahunnya karena masih fokus pada peran sosialnya dalam melayani penyediaan air bersih masyarakat dan memperluas jangkauan layanan. PDAM juga belum pernah menerima subsidi bantuan operasional dari Pemerintah Kabupaten Halmahera Selatan.

Pernyataan kepentingan publik

Studi ini mengusulkan perubahan tarif yang dapat menutupi biaya penuh (full cost recovery) kepada Bupati Kabupaten Halmahera Selatan. Apabila usulan tarif tidak disetujui, maka PDAM harus berupaya mendapatkan subsidi bantuan operasional untuk menutupi seluruh biaya dari Pemerintah Kabupaten Halmahera Selatan.

Kata kunci: Pasokan air, pemulihan biaya penuh, kebijakan tarif

INTRODUCTION

Sales are one source of income for a company; the more significant the sales activity in a company, the greater the costs that will be incurred by the company. Hence, the sales budget is a written plan expressed in terms of the number of products to be sold by the company in a certain period of time. Profit is the difference between income and the balance of costs and expenses for a certain period (Nurlaelah et al., 2016). The Regional Drinking Water Company is also a business entity engaged in clean water supply services related to its profit-oriented position. Although water resources are said to be abundant geophysically, only a tiny part can be used directly (Sari & Junaedi, 2019).

As one of the regional companies engaged in public services in providing clean water to the community, local water companies have a social obligation to distribute clean water to the community at affordable rates (Sari & Junaedi, 2019). In general, one of the goals of establishing a company is to make a profit. But in fact, until now, many regional drinking water companies (PDAM) in Indonesia, especially PDAM in the North Maluku Province region, have suffered losses.

Table 1 shows that in 2018 and 2019, only PDAM Kota Ternate consistently made a profit. If this condition continues, it will significantly affect the quality of drinking water services and the company's survival. One of the issues causing losses to PDAMs that companies often complain about is the company's inability to cover operating expenses or the company's failure to perform full cost recovery due to the setting of drinking water tariffs that are too low. For PDAM of South Halmahera Regency, for example, until now, the water tariff applicable to PDAM of South Halmahera Regency was still referring to the 2006 tariff.

Table 1.*Profit (loss) of company*

Name PDAM	Profit (LOSS)	
	2018	2019
PDAM Kabupaten Halmahera Utara	(2.916.641.023)	(3.158.568.347)
PDAM Kabupaten Halmahera Selatan	(4.105.515.098)	(5.694.743.652)
PDAM Kota Tidore Kepulauan	(3.201.393.417)	(4.809.188.048)
PDAM Kota Ternate	1.448.100.115	1.018.135.061
PDAM Kabupaten Pulau Morotai	(2.142.965.063)	(3.704.803.011)
PDAM Kabupaten Halmahera Barat	(254.837.287)	692.558.257
PDAM Kabupaten Halmahera Tengah	Not Formed	(807.801.679)
PDAM Kabupaten Kepulauan Sula	(1.550.243.031)	(1.492.405.707)

Source: North Maluku Province BPKP Representative, PDAM Performance Evaluation

Mauliyah (2016) conducted a study related to the feasibility of tariffs at PDAM Blitar Regency covering full cost recovery. The results of this study indeed indicate that the tariff of PDAM Kota Blitar is not able to achieve full cost recovery. In order to maintain the continuity of water services to the community, a subsidy is needed from the Blitar City Government to be able to cover all business expenses, or a new policy related to changes in applicable tariffs is needed. Based on this background, researchers feel the need to conduct research related to "Analysis of the Feasibility of PDAM Tariffs in South Halmahera Regency Based on Full Cost Recovery.

CASE DESCRIPTION

The Regional Drinking Water Company (PDAM) is an institution under the aegis of the regional government in the form of BUMD that carries out public services and services regarding the demand for clean water. PDAM was established with the aim of fulfilling the demand for drinking water for citizens so that it can prioritize equal distribution of services and health, encourage the economic development of a region, and be one of the region's original sources of income (Anggraini & Nurhayati, 2022).

Cost analysis through the calculation of the cost per unit can be used by hospitals as a basis for measuring performance, preparing budgets and subsidies, and as a basis for reference in proposing tariffs (Aurelia & Pujiyanti, 2017). The cost components that are taken into account in the calculation of tariffs include operating and maintenance costs; depreciation and amortization expenses; loan interest costs; other costs; and reasonable profits (Aslantua et al., 2018).

Drinking water tariffs are expenses for drinking water services that must be paid by government users for each use of water provided by BUMN, BUMD, and UPT. The tariff for drinking water is a guideline for the cost of drinking water services, which is then decided by the regional head for the use of each cubic meter (m³) or other volume units provided by BUMNUD drinking water and must be paid by the user or customer (Anggraini & Nurhayati, 2022).

The calculation and determination of drinking water rates as intended must be based on the following principles: a. affordability and fairness; b. service quality; c. cost recovery; d. water use efficiency; e. transparency and accountability; f. raw water protection (Aslantua et al., 2018). Water rates are one of the determining elements for obtaining PDAM revenue, while revenue is

very important for PDAM operational activities. PDAM's main opinion comes from the amount of water sold, which is highly dependent on the size of the applicable water tariff (Juheri, n.d.).

If a company uses the full costing approach in determining the cost of production, the full cost is the total cost of production (raw material costs + direct labor costs + variable factory overhead costs + fixed factory overhead costs) plus total non-production costs (administrative and general costs + marketing costs) (Normal & Mahanavami, 2015). The cost components that are taken into account in the calculation of tariffs include operating and maintenance costs; depreciation and amortization expenses; loan interest costs; other costs; and reasonable profits (Aslantua et al., 2018). In another sense, the full cost recovery project is the desire of the owner or investor to guarantee that the costs incurred (investment, operation, maintenance, as well as reasonable interest and profits) will be returned as a whole before the project's operating period ends (Herlina & Sandhyavitri, 2014).

METHODS

The method to be used in this research is the descriptive method (Situmorang, 2019). The data in this study were obtained from secondary sources in the form of PDAM South Halmahera Regency Financial Statements Audited by a Public Accountant Office (KAP) and Performance Evaluation Reports for PDAM South Halmahera Fiscal Year 2017–2019 by BPKP Representatives of North Maluku Province. In this study, the formula for calculating the feasibility analysis of PDAM tariffs used refers to Minister of Home Affairs Regulation Number 71 of 2016 concerning the calculation and determination of drinking water tariffs, full cost recovery, and its amendment, namely Minister of Home Affairs Regulation Number 21 of 2020.

Based on Minister of Home Affairs Regulation Number 21 of 2020, full cost recovery is based on calculating the average rate equal to the basic cost. Where the average tariff is the total tariff revenue divided by the total volume of water sold, the formula is as follows:

$$\text{Average tariff} = \frac{\text{Total Water Revenue (all tariff groups)}}{\text{Water sales volume}}$$

The basic cost is defined as the cost required to produce each cubic meter of drinking water calculated on the basis of business costs divided by the volume of water produced minus the volume of standard water loss in a one-year period, If written in the formula, it is as follows:

$$\text{Basic Cost} = \frac{\text{Total Operating Expenses}}{\text{Production Volume} - (\text{Standard NRW} * \text{Production Volume})}$$

Level of Non-Revenue Water (NRW) The applicable standard is 20%, referring to Regulation of the Minister of Public Works Number 20/PRT/M/2006 concerning National Policy and Strategy for the Development of Drinking Water Supply Systems (KSNP-SPAM).

FINDINGS AND DISCUSSION

Based on the description in the above section, the results of the feasibility analysis of PDAM South Halmahera Regency based on full cost recovery are as follows:

Table 2.*Water revenue per tariff of company*

Group Rates	2018		2019	
	usage Water (m3)	Total Water Revenue (Rp)	usage Water (m3)	Total Water Revenue (Rp)
Household:				
Household 1/2A	-	-	-	-
Household 2 / 3A	1.843.012	5.516.084.000	1.938.566	5.806.029.100
Household 3 / 4A	170.794	738.462.000	273.871	1.186.062.500
Social:				
Place of Worship / 1B	29.712	26.529.000	24.638	23.203.500
Social Foundation / 2B	12.039	27.712.750	12.785	29.626.250
Effort:				
- Small Business / 3B	172.500	509.496.000	169.013	498.800.500
- Big Business / 4B	32.125	137.811.500	33.703	145.723.500
Government agencies:				
- Government 1/2C	48.437	116.617.500	56.380	135.883.000
- Government 2 / 3C	20.983	70.018.500	26.938	90.039.000
- Government 3 / 4C	8.961	39.515.500	12.801	55.981.500
Harbor:				
-- Port / 5A	2.841	29.310.000	3.540	36.300.000
HU/MCK/TA/1A:				
-- General Faucet	36.103	31.312.250	28.933	25.859.750
Amount	2.377.507	7.242.869.000	2.581.168	8.033.508.600

Source: BPKP Representative of North Maluku Province, Performance Evaluation of PDAM South Halmahera Regency

Table 3.*Structure of operating expenses*

Load Type	2018		2019	
	Total Expense (Rp)	Percentage Total	Total Expense	Percentage
Employee Expenses	3.982.975.300	33,08%	4.059.143.254	28,11%
Electrical Load	156.028.004	1,30%	140.550.025	0,97%
Fuel Load	388.349.000	3,23%	564.977.450	3,91%
Chemical Usage Beban	0	0,00%	197.285.000	1,37%
Maintenance Expense	1.008.467.512	8,38%	417.748.000	2,89%
Auxiliary Material Usage	1.990.000	0,02%	1.440.000	0,01%
ATK and Printed Items Load	149.312.700	1,24%	138.450.400	0,96%
Office Load	359.098.710	2,98%	348.994.999	2,42%
Research and Development Burden	161.800.000	1,34%	67.250.000	0,47%
Allowance for Receivables	1.854.577.322	15,40%	1.392.455.371	9,64%

Table 3 Continued

Depreciation/Amortization Expense	3.041.606.540	25,26%	5.816.015.964	40,27%
Other Operating Expenses	936.093.798	7,77%	1.297.935.200	8,99%
TOTAL BUSINESS EXPENSES	12.040.298.886	100,00%	14.442.245.663	100,00%

Source: KAP Sukardi Hasan and Partners, Audited Financial Report of PDAM South Halmahera Regency

Production volumes in 2018 and 2019 were 2,651,302 m3 and 3,017,371 m3

Average Tariff Calculation

$$\begin{aligned} \text{Average fare (2018)} &= \frac{\text{Total Water Revenue (all tariff groups)}_{2018}}{\text{Water sales volume}_{(2018)}} \\ &= \frac{\text{Rp 7.242.507.000}}{2.377.507 \text{ m}^3} \\ &= \text{Rp 3.046.41/m}^3 \end{aligned}$$

$$\begin{aligned} \text{Average fare (2019)} &= \frac{\text{Total Water Revenue (all tariff groups)}_{2019}}{\text{Water sales volume}_{(2019)}} \\ &= \frac{\text{Rp 8.033.508.600}}{2.581.168 \text{ m}^3} \\ &= \text{Rp 3.112,35/m}^3 \end{aligned}$$

Basic Cost Calculation

$$\begin{aligned} \text{Base Fee 2018} &= \frac{\text{Total Operating Expenses}_{(2018)}}{\text{Production Volume}_{(2018)} - (\text{Standard NRW} \times \text{Production Volume}_{2018})} \\ &= \frac{\text{Rp 12.040.298.886}}{2.651.302 \text{ m}^3 - (20\% \times 2.651.302 \text{ m}^3)} \\ &= \text{Rp 5.676,60 / m}^3 \end{aligned}$$

$$\begin{aligned} \text{Base Fee 2019} &= \frac{\text{Total Operating Expenses}_{(2019)}}{\text{Production Volume}_{(2019)} - (\text{Standard NRW} \times \text{Production Volume}_{(2019)})} \\ &= \frac{\text{Rp 14.442.245.663}}{3.017.371 \text{ m}^3 - (20\% \times 3.017.371 \text{ m}^3)} \\ &= \text{Rp 5.982,96 / m}^3 \end{aligned}$$

Full cost recovery analysis

Based on Minister of Home Affairs Regulation Number 21 of 2020, full cost recovery is based on calculating the average rate equal to the basic cost. From the data above, in 2018, the average water tariff per m³ was IDR 3,046.41, or 53.67% of the basic water cost per m³ of IDR 5,676.60, or 46.33% lower than the break-even point (break-even point), which means that PDAM gets a loss of Rp. 2,630.18 per m³ of water sold. Meanwhile, for 2019, the average water tariff per m³ is Rp. 3,112.35, or 52.02% of the basic cost of water per m³, which is Rp. 5,982.96, or 47.98% lower than the break-even point. which means that PDAM gets a loss of IDR 2,870.61 per m³ of water sold.

Table 4.

Full cost recovery analysis

Information	2018	2019
Average Fare	Rp3.046,41	Rp3.112,35
Basic Fee	Rp5.676,60	Rp5.982,96
The difference between the average tariff and the basic cost	(Rp2.630,18)	(Rp2.870,61)

Thus, both in 2018 and 2019, the selling price of water is still below the basic cost of water, so the prevailing average tariff has not been able to fully cover costs (full cost recovery).

Water revenues have not been able to fully cover costs because PDAM is still using the 2006 water tariff, which is no longer relevant to current conditions. Until now, PDAM has never proposed a new tariff policy and has not evaluated the tariff policy every year as instructed in Permendagri 71 of 2016 and its amendments. PDAM of South Halmahera Regency is still focused on its social role to serve the community's water supply and expand the scope of services.

Based on Permendagri 71 of 2016 Article 27 paragraph (5), it is stated that "In the event that the Regional Head decides the tariff is lower than the proposed tariff proposed by the board of directors as referred to in paragraph (4), which results in the average rate of not achieving full cost recovery, the local government is obliged to provide a subsidy policy to cover the shortfall through the APBD". Then it was strengthened by the amended regulation, namely Permendagri 21 of 2020 article 29A paragraph (1), namely "The governor requires the provision of subsidies from the Regency or City Regional Revenue and Expenditure Budget if the Regent or Mayor sets a rate below full cost recovery". However, to date, PDAM has never received any subsidy for operational assistance from the South Halmahera Regency Government.

This condition should not continue to occur because it can threaten the survival of the company and water services to the community. Therefore, the PDAM of South Halmahera Regency must immediately make improvements, starting with a proposed change in tariffs that can cover full cost recovery. If the proposed tariff is not approved, then the South Halmahera Regency Government should provide operational assistance subsidies to PDAMs. If these two things cannot be achieved, then the only solution is that PDAM must improve cost efficiency. Based on the operating expense structure table, it is known that the biggest burden on the PDAM of South Halmahera Regency is employee expense and depreciation expense. The efficiency of employee burden may be difficult to achieve because it involves the welfare of many people. Therefore, PDAM should maximize efficiency in depreciation expenses. Based on the research, PDAM of South Halmahera Regency has not carried out asset management properly. This can be seen from the PDAM, which does not yet have an asset management policy and has not fully used the Geographic Information System (GIS) system in mapping its pipeline network. For this reason, PDAM can reduce depreciation expense by conducting asset inventory so that asset condition can be known accurately and asset write-off can be done immediately if any asset has been heavily damaged or lost so as to reduce depreciation expense on fixed assets. In addition,

by knowing the condition of assets for sure, the company can make the right decisions in order to optimize the use of assets to increase company revenues.

CONCLUSION

From the results of the analysis that has been carried out, it can be concluded as follows: First, in 2018, the average water tariff per m³ was Rp3,046.41, or 53.67% of the basic water cost per m³ of Rp5,676.60. Meanwhile, for 2019, the average water tariff per m³ is Rp. 3,112.35, or 52.02% of the basic cost of water per m³ of Rp. 5,982.96. In 2018 and 2019, the selling price of water was still below the basic cost, or the cost of water, so the prevailing average tariff has not been able to fully cover costs (full cost recovery). This happened because it used the 2006 water tariff, and PDAM of South Halmahera Regency has never proposed a new tariff policy and has not evaluated the tariff policy every year because it is still focused on its social role of providing water supply to the community and expanding service coverage. PDAM has also never received a subsidy for operational assistance from the South Halmahera Regency Government.

Based on the description above, it is suggested to the PDAM Management of South Halmahera Regency to make improvement efforts as follows: First, make a proposal for tariff changes that can cover full cost recovery for the Regent of South Halmahera Regency, If the proposed tariff is not approved, then PDAM must seek to obtain operational assistance subsidies to cover the full costs of the South Halmahera Regency Government, and If both of these efforts have not been successful, then the PDAM must implement cost efficiency to reduce its high operating expenses. Second, this research can be used as a reference in the Management Accounting course so that management can see how companies are able to measure and utilize their resources to increase company value and analyze business feasibility so that companies can record profits and, besides that, can provide good service to the community.

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