Perceptions Of Fairness And Capability As Challenges To Implementing Full Cost Recovery On Drinking Water Tariffs

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Abstract. Implementation of the full cost recovery policy in determining drinking water tariffs still faces challenges due to perceptions of fairness and capabilities in society. This study examines how these two perceptions become challenges and how to overcome them. Through qualitative analysis of secondary data, this study found that the water tariffs were perceived as unfair when compared with the services received because water continuity and quality problems had not been resolved. The perception of capability drove tariffs to be determined only based on consumers' economic capacity without considering operational cost requirements. These two perceptions challenge the achievement of an independent and sustainable supply of safe drinking water. Full cost recovery should be applied so that tariffs can cover funding needs for improving services, including maintaining facilities and water quality, but consumers demand improved services first and insist on the lowest prices.

Keywords: capability**,** fairness, full cost recovery, drinking water tariffs.

1. Introduction

The Indonesian government adopted the 2030 Agenda for Sustainable Development in Presidential Regulation (Perpres) Number 59 of 2017 concerning the Implementation of the Achievement of Sustainable Development Goals (SDGs). It was then concretized through the National Medium Term Development Plan (RPJMN) for the 2015-2019 and 2020-2024 periods. In the RPJMN for the 2020-2024 period, the sixth indicator of the SDGs regarding clean, adequate, and safe water is achieved through a Strategic Priority Project to increase access to 100%. Achieving this target does not only rely on the Central Government but also the contribution from the Regional Government, Regional-owned Enterprises operating in the drinking water sector (ROE), and collaboration with village governments as well as local communities.

In the RPJMN, it is stated that the water access target is important because it is correlated with the high prevalence of water-borne diseases, such as diarrhea and stunting. Based on data from the Central Statistics Agency (BPS), until 2023, the percentage of households with access to

PSIC 2024, September 11-12, Lombok, Indonesia

DOI 10.4108/eai.11-9-2024.2354434

adequate drinking water has been realized at 91,72% [1]. Proper access is not the final target to be achieved. According to the ladder in the SDGs, the target to be realized by 2030 is safe and affordable access for all. The criteria for safe water access are if the water source is suitable to be in or in the yard of the house (accessibility), available at all times, and meets drinking water quality standards [2]. This shows there is some work to be done. Furthermore, the Summary of the Indonesian Supreme Audit Board (BPK) Audit Results for Semester II 2022 revealed that the provision of access to safe drinking water still faces funding constraints, particularly for the maintenance of facilities that have been built. Apart from that, there is also a dilemma between the decision to increase tariffs to cover operational costs and the social function of management in providing the community's water needs [3]. If this funding constraint is not resolved immediately, it could hamper the achievement of the SDGs target.

One element of funding that needs attention is the tariff charged to drinking water consumers. Drinking water management certainly cannot always depend on the assistance of subsidies from the government. With tariffs, management should be able to run independently. In Indonesia, policies regarding water tariffs are regulated by Minister of Home Affairs Regulation (Permendagri) Number 71 of 2016 concerning the Calculation and Determination of Drinking Water Tariffs, which was last amended by Minister of Home Affairs Regulation Number 21 of 2020. The provisions of Article 2 and Article 5 of this regulation stipulate that drinking water tariffs determined by the Regional Head as a basis for ROEs to charge their consumers must be based, among other things, on cost recovery which fully covers their operational needs. Ideally, this regulation is a strong basis for ROEs to apply tariffs following the full cost recovery principle. However, according to the 2023 ROEs Drinking Water Performance Book, only 42.49% or 167 of 393 ROEs have implemented this tariff principle, from the target of 100% which is to be achieved in 2024 [4].

The principle of full cost recovery should also be applied to the amount of contributions for community-based management. The technical instructions program from the Ministry stipulates that community contributions are determined based on the same considerations as ROEs water tariff. The difference is, that the amount of the contribution needs to be agreed upon in a community discussion forum and then ratified by a village head decree or village regulation. In reality, the determined contribution amount is not enough to cover operational costs, and some residents do not comply with paying the agreed value [5]. This principle is needed to guarantee funding independence while ensuring the continued function of the facilities that have been built. The barriers to its implementation could slow down the expansion of water access in other areas. This study is intended as a contribution so that funding problems no longer hinder the goals of sustainable water management.

Previous studies have discussed the need for a holistic approach and collaboration of many parties in water resource management issues [6], [7]. Issues, such as the availability of clean water at affordable costs, have been identified as an obstacle that needs to be overcome [8], [9]. Applying the water governance paradigm could be the solution for it [6], [10], [11], [12]. Ability to pay, bookkeeping of contributions, and willingness to pay from the community influence the level of sustainability of community-based drinking water management [13]. As far as the author can find, there has been no research that specifically discusses the challenges faced in implementing full cost recovery in drinking water management tariffs/contribution, particularly in Indonesia. This study aims to answer the questions about what these challenges

look like from the perspective of justice and capability, and what are the solutions so that the management of access to adequate and safe drinking water is guaranteed to be sustainable.

2. Literature Review

2.1. Water Governance and Management

Discussions about water are not limited to environmental scopes but also include economic and social impacts. Therefore, solving water management challenges is not only related to the sixth SDGs target, it also includes other targets such as sustainable development and improved health. Water management is not solely the responsibility of governments. The Organization for Economic Co-operation and Development (OECD) uses the term "governance" to indicate the breadth of participating parties. The OECD introduced the concept of water governance which includes three main clusters, namely effectiveness, efficiency, trust and engagement, which are then detailed into 12 principles, ranging from a clear division of roles and responsibilities to periodic monitoring and evaluation of the policies implemented [14]. Governance is an important matter in dealing with increased competition for water use and climate change [15]. Effective water governance is essential for successful water management [16]. It may minimize water inequality by promoting equitable distribution and sustainable use of resources [17].

In Indonesia, water resources are regulated by Law Number 17 of 2019, which provides regulations regarding its management and funding. Water management according to this law includes planning, implementation, monitoring, and evaluation of water resources conservation activities, utilization of water resources, and control of water damage. Eleven principles in water resources management must be upheld, namely: public benefit, affordability, local wisdom, environmental insight, integration and harmony, transparency and accountability, sustainability, continuity, independence, balance, and justice. The application of these principles is actually to create order in water governance. However, water-related policies in Indonesia are still fragmented and fall under sectoral regulations and responsibilities. It is also hampered by a misalignment of environmental sustainability with social and economic goals [18].

Law Number 17 of 2009 also clearly articulates that water resources are managed by the institution that is given the duties and responsibilities by the Central or Local Government following statutory provisions. Even so, the private sector is still given the opportunity to use water as a business. The frail role of government triggers greater opportunities for private companies to develop the bottled drinking water business for the community. This gives rise to the perception of water privatization [19].

2.2. Full Cost Recovery Tariffs

Regarding funding, Article 57 of Law Number 17 of 2009 stipulates that the determination should be based on the real needs of water resources management activities. The explanation of this article clarifies the meaning of "real needs" or "kebutuhan nyata", namely funds required solely to finance water resources management to ensure their continuity. At the implementing regulation level, it is stated that the principle of full cost recovery is applied in drinking water tariffs/contributions.

This full-cost concept originally came from a recommendation from the World Water

Commission as a key action in the visions to be achieved by 2025. The existence of this concept was motivated by the fact that water began to become scarce around the 1990s, so it was deemed necessary to make water an economic good. Controversy over the application of this concept arose partly because water was initially perceived as a free gift from God, and previously, the government had always subsidized it to provide access opportunities for those who could not afford it. Although water is a renewable resource, obtaining it currently requires efforts to collect, treat, transport, clean up after use, and return to the water flow. The full-cost concept is intended to cover the costs of infrastructure and services needed in this effort [20].

In Indonesia, according to the Minister of Home Affairs Regulation Number 21 of 2020, costs that must be recovered by tariffs include operation and maintenance costs, depreciation, loan interest, and other operations, including non-revenue water. Cost-recovering tariffs indeed aim to improve utility efficiency, control demand efficiently, and empower consumers, resulting in more inclusive water services. However, empirical research in Africa suggests that implementing this principle may worsen inequality in access to drinking water rather than diminish it [21].

2.3. Fairness and Capability

Perceptions of fairness and capability in this study are used to describe the justice perceived by the public regarding drinking water tariffs which will apply the principle of full cost recovery. According to John Rawls, fairness is the outcome of justice. Rawls advocates justice by rational and fair approaches that are universally acceptable as they go beyond individual biases and temporal limitations. By doing so, the principles of justice are fair and apply to all people, regardless of their specific circumstances or position. Specifically regarding tariffs, Rawls argued that progressive schemes should only be imposed to preserve justice, including fair equality of opportunity. He agrees that progressive tariffs are aimed at creating inequality to benefit disadvantaged groups [22].

Meanwhile, Amartya Sen offers a different approach to justice, where he highlights the differences in individual capabilities that must be taken into account. This capability approach focuses more on what a person can do and achieve in their life rather than their means of living, such as income or wealth. According to Sen, policies with a capability approach will be able to truly improve human welfare because they put more attention to individual needs and abilities, as well as the conditions that enable them to live the lives they value as important. Based on the capabilities approach, water tariffs should ensure equal access to water. This can be done by designing affordable price structures, cross-subsidies, and other policies aimed at ensuring that all individuals can achieve a basic living standard [23]. Although Rawls focuses on the distribution of means and Sen on capabilities and real opportunities, both approaches support that drinking water tariffs should reflect equitable access for all.

3. Methodology

Even though there are materials from other scientific disciplines, this study is constructed as a legal study. The diagnostic form was applied because it aimed to obtain information regarding the obstacles to implementing regulations related to the full cost recovery principle [24]. This study only uses secondary data which includes primary legal materials in the form of statutory regulations; secondary legal materials in the form of audit reports from the BPK, reports from the BPS and the Ministry of Public Works and Housing, books related to the theory of justice

from John Rawls and Amartya Sen, as well as non-legal material relevant to the study theme, namely about full cost recovery, drinking water governance and management, and the theory of planned behavior. The data that has been collected is then analyzed qualitatively using statutory and conceptual approaches [25].

4. Results and Discussion

Protests against tariff increases are an initial phenomenon that indicates a perception of injustice. Based on internet search results, the reasons for this response can be identified in the following table.

Table 1: Reasons and Perceives for Tariff Increases

Reasons	Perceives		
	Burdens customers/ community	**Inadequate services (water stops flowing, leaks)**	**Poor communication (sudden increase, lack of dissemination of basis calculation)**
Perumda Tirta Mahakam Kukar to cover higher operational costs [26]	√		
PDAM Indramayu to cover operational costs [27], [28]	√	√	
PDAM Karangasem Regency since there has been no increase for 14 years [29]	√		
Perumda Tirta Anom to comply with the provisions	√		
PDAM Tirta Musi to improve services and cover operational costs [30], [31]	√		
PDAM Danum Taka North Penajam Paser Regency to improve service operations [32], [33]		√	√
Perumda Tirta Mayang to cover operational costs for dealing with non-revenue water [34]	√		√

Note: *The data is processed from news on the internet*

The increase in ROEs tariffs, including implementing full cost recovery, is carried out based on

the provisions of Minister of Home Affairs Regulation Number 21 of 2020. As a legal basis, this regulation has coercive power. However, data in the table above show that, in reality, this power is repelled by rejection from society so that the regulation cannot be directly implemented. Increasing the economic burden on society is the dominant reason for rejection.

Such rejection does not occur in community-based drinking water management because there is no coercion in the concept of contributions and the determination of the amount is carried out based on mutual agreement. However, this agreement also has consequences, namely when the contributions are determined only based on the willingness to pay or adjustments to the lowest capabilities in the community, thereby ignoring the principle of full cost recovery. Other consequences of the agreement concept can be identified from the audit report conducted by the BPK, in the following table.

Table 2: BPK's Audit Reports on Water Management

Audit Report's Number	Audit Findings
71/LHP/XIX.TJS/12/2022	An agreement was not reached so there was no collection of contributions.
18/LHP/XIX.TER/12/2022	There are no contributions so as not to burden village residents, water distribution relies on gravity.
20/LHP/XIX.BJM/12/2022	The contributions are not based on technical calculations so they do not cover operational costs and make it difficult to manage the contributions themselves.
	The contributions that are not authorized by village regulation/decree of the village head do not have a legal basis that binds the community to comply with the agreed contributions, coupled with a lack of awareness among residents regarding the urgency of the contributions

Note: *BPK data*

The data above shows that whether with tariff or contribution models, resistance to water prices will always arise. There are perceptions of unfairness and unequal capabilities behind this.

4.1. Perception of Unfairness as a Challenge to Drinking Water Tariffs/Contributions

The tariff is considered unfair because not all consumers have an equal opportunity to get drinking water. The rejection of increases in drinking water tariffs is a response to inequality. Therefore, differences in quality among service areas, including compensation mechanisms in the event of disruption, should be considered in setting tariffs and calculating bills. Besides, differences in service may also lead to differences in the amount of costs that must be recovered.

Subsequently, inequality of opportunity arises when there are consumers who do not pay the contributions and are not subject to any sanctions. Compliant consumers will consider that their sacrifice to contribute is not commensurate with what they receive because they see that other consumers who violate the agreement can still receive the same service as them.

4.2. Perception of Inequal Capabilities as a Challenge to Drinking Water Tariffs/Contributions

This perception of inequity stems from the view that water should be obtained free of charge. The experiences with never-ending water continuity and quality problems underlie the idea that increasing tariffs is not the right solution if management's reason to overcome these problems. When prices are put on water, consumers expect to receive more value. In some cases, individuals who previously had difficulty accessing water may be more cooperative in paying contributions for the maintenance of facilities that have been built since they realize their needs and see that there will be benefits to be gained. Services that do not meet expectations mean that there is value that is not received, thus, affecting the level of willingness to pay.

Individuals with good capabilities may easily buy bottled water but, unprotected water sources may be an option for individuals with poor capabilities, resulting in health risks. Therefore, in determining the amount, it is necessary to consider the individual's ability to reach it so that the tariff/contribution does not become a barrier to access to safe water. Management groups have to face the dilemma of whether contributions should only be determined based on individual economic capabilities or the amount of operational expenses. When the maintenance costs required are perceived as too expensive, consumers will likely neglect the continued function of the facility. On the other hand, insufficient contributions will make operations difficult, especially as they cannot depend on government assistance continuously.

This perception seems to have been identified by the government, as can be seen from the implementation of grouping by customer type and progressive tariffs. However, these schemes cannot break down the walls of unfair water price perceptions. Indeed, as long as those who refuse are in the minority, tariffs/contributions will have the opportunity to be enforced to fulfill the full cost recovery principle, or even generate business profits, as an indicator of stable management. Even so, the state must still be responsible when inappropriate tariffs/contributions actually hinder access to safe water as the constitution mandates that control of water by the state is aimed at the prosperity of the people.

The state is also required to be present in overcoming health problems. Cases of stunting and other water-related diseases also require costs to treat. Besides, when funding independence has not been established, the government will be asked again to repair the damaged facility so that it does not become stalled. These costs take allocations from the state budget which could also be used for building/expanding water access in other areas or development in other fields.

Consciousness needs to be raised because water is now becoming scarce, especially during the dry season, and polluted. Without awareness of the health risks, people tend to choose other free water sources [35]. Even though water from dug wells or rivers is easy to obtain, the quality is prone to contamination since it does not go through a purification process. To change this behavior, it is necessary to start with a change in intention, by influencing attitudes that determine behavior, emphasizing subjective norms, and controlling perceived behavior [36]. Planned behavior theory is used to provide input to make water tariff policies more effective.

Attitude changes can be made by providing education, using methods that suit the character of local residents, about the urgency of tariffs for maintaining water infrastructure and their impact on improving the quality of health. The explanation of tariffs also needs to be detailed down to

the calculations of costs that need to be recovered and determining factors, including plans for subsidy schemes, if any. It is also necessary to emphasize how the tariff pattern will be able to accommodate service expectations and consider the economic capabilities of consumers.

The education provided to individuals can be strengthened by social pressure through the involvement of community leaders to convey the urgency of tariffs. In addition, campaigns via social media can also be used to make people aware of the importance of independent and sustainable access to safe drinking water. Behavior that has changed in society also needs to be supported by commensurate reciprocity, such as ease of payment methods, well-targeted subsidies, as well as transparency and accountability so that society can assess how the prices they pay are managed as optimally as possible. Then, monitoring is carried out through surveys to gather feedback to see changes in community attitudes and behavior, followed by evaluation through measuring community satisfaction levels with tariffs. The results of monitoring and evaluation are used to identify areas that require improvement and communicate back the adjustments that need to be made.

5. Conclusion

The perception that water is a gift from God and therefore should be free is the beginning of the emergence of perceptions of unfairness and unequal capabilities in determining water tariffs. Perceptions of unfairness relate to unequal services return, while perceptions of inequality in capabilities drive tariff setters to only focus on economic capabilities and shift back operational cost requirements. The public needs to be made aware of the risks of water scarcity and pollution that are currently occurring, and that handling these risks requires costs.

For this reason, intervention is needed to instill an understanding that tariffs/contributions are an investment for better health quality rather than an economic burden. This is an essential step in shifting initial perceptions of water access. The intervention in question can be carried out by providing education and clear communication, involving community leaders, social campaigns, and means to facilitate behavior change, such as alternative payment channels for convenience, providing targeted subsidies, transparency, and accountability in fund management. Lastly, monitoring and evaluation need to be carried out to assess the appropriateness of tariffs and identify adjustment steps that can be taken. This study has explained perceptions and solutions to the application of water tariffs/contribution so that subsequent studies can elaborate on the necessary intervention models. The goal is that the imposition of water tariffs can run well and have an impact on sustainable management.

Acknowledgements

The author would like to thank the Badan Pemeriksa Keuangan and Universitas Gadjah Mada.

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