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license**WOMEN'S AGENCY IN CLEAN WATER AND
SANITATION MANAGEMENT IN RIVERBANK
SETTLEMENTS OF BANJARMASIN CITY: A COMMONS
GOVERNANCE AND FEMINIST STANDPOINT
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Banjarmasin 70124, Indonesia*Email korespondensi: ni'mah@ulm.ac.idDOI: <https://doi.org/10.30598/baileofisipvol4iss1pp310-322>**ABSTRACT**

Banjarmasin, known as the "City of a Thousand Rivers", has a large share of dense riverbank communities in which clean water and sanitation problems remain only partially resolved despite steadily improving national indicators. This study aims to analyse the pattern of gender relations in community-based clean water and sanitation management in the riverbank settlements of Banjarmasin City and to explain that pattern through the frameworks of commons governance and feminist standpoint theory. The study applies a descriptive qualitative approach combining secondary data analysis (desk research) of scientific publications, official government reports, and regional policy documents with semi-structured interviews with three purposively selected women informants; the data were analysed through data reduction, thematic categorisation, and narrative interpretation. The results show that women are empirically the main users and managers of household water and sanitation resources in riverbank areas, yet their participation in formal decision-making on river governance and water-sanitation infrastructure, including the Tripikon-S technology, remains confined to the technical-implementation level. Three patterns were confirmed through the interviews: women are positioned solely as water users rather than policymakers, they are underrepresented in public deliberation spaces, and domestic gender relations position them as the household's primary water providers. It is concluded that water and sanitation problems in riverbank settlements are not merely technical and infrastructural but also institutional and epistemic, so that gender-just water governance requires strengthening women's formal representation in community-based commons management at the sub-district level.

Keywords: Sociology of River Communities, Gender Equality, Commons Governance, Feminist Standpoint, Riverbank Settlement Sanitation

INTRODUCTION

The socio-cultural and geographical identity of Banjarmasin is closely intertwined with its rivers. Historically, much of the city's settlement patterns, transportation systems, and economic activities have been organized around its river network, particularly the Martapura and Barito Rivers. Dense settlements along riverbanks remain a distinctive feature of the urban landscape and continue to generate structural problems related to access to clean water (Wahyu, 2020). This long-standing dependence indicates that rivers in Banjarmasin are not merely geographical features but common resources whose sustainability is shaped by how residents manage them

in their everyday lives. From this perspective, the problem of clean water in the city should be understood as a matter of the social governance of common resources, rather than merely as a matter of government infrastructure provision.

Access to adequate drinking water and sanitation in Indonesia has continued to improve over the years. In 2024, Statistics Indonesia reported that 92.64 percent of the population had access to adequate drinking water, while 83.60 percent had access to adequate sanitation (Statistics Indonesia, 2025). However, these national aggregate figures conceal substantial spatial disparities, particularly in densely populated riverbank settlements such as those found throughout Banjarmasin. Research on informal settlements in Sungai Bilu Village, for example, shows that building density, limited land availability, and the prevalence of stilt or floating houses make the implementation of conventional sanitation systems, such as standard septic tanks, difficult (Rahman et al., 2019). The municipal government has introduced Tripikon-S technology as an alternative for treating domestic wastewater discharged into the river. However, studies evaluating the efficiency of this technology indicate that the quality of effluent discharged into the Martapura River has not fully met the applicable quality standards (Normasari et al., 2017; Rachman, 2018). These aggregate data and technical findings point to the same implication: sanitation problems in riverbank settlements cannot be reduced to the availability or absence of technology. When installed technologies continue to fail to meet quality standards, the key question shifts to who maintains, monitors, and enforces their proper use on a daily basis. This is fundamentally an institutional and social question rather than merely an engineering one.

Gender in the everyday practice of water and sanitation management represents an important social dimension underlying the technical and infrastructural problems that is often overlooked in policy. The Ministry of Women's Empowerment and Child Protection (2019) indicates that women bear much of the responsibility for meeting household water needs, maintaining the environment around the home, and carrying the domestic burdens resulting from inadequate sanitation. A similar pattern has been identified in the Community-Based Drinking Water and Sanitation Program (PAMSIMAS), in which women serve as daily implementers and users but have limited participation in formal institutional decision-making (Nasution et al., 2024). Studies in feminist political ecology from different parts of the world likewise demonstrate that women often bear disproportionate physical and emotional burdens in accessing, controlling, and managing water resources, while men continue to exercise greater authority over strategic decisions (Sultana, 2011; Harris, 2009; Cole, 2017). These findings reveal a consistent separation between burden and authority: women undertake much of the work involved in managing water, while the authority to determine how that management is organized remains in the hands of others. This separation makes gender relevant as an institutional dimension of water governance, rather than merely as a normative issue of justice external to technical concerns.

Previous studies related to this topic can be grouped into three strands. The first focuses on the technical and spatial dimensions of riverbank settlements in Banjarmasin, including

studies on the spatial planning of informal riverbank settlements in Sungai Bilu Village (Rahman et al., 2019), the efficiency of Tripikon-S for treating wastewater generated by riverside communities (Normasari et al., 2017; Rachman, 2018), and training on the construction of Tripikon-S for Community Self-Reliance Organizations in Kuin Selatan Village (Agustina et al., 2024). These studies provide important insights into engineering and spatial dimensions, but they tend to treat the household as a homogeneous unit and therefore do not distinguish who within the household actually bears the work of managing water. The second strand examines women's participation in community-based water and sanitation programs, particularly evaluations of PAMSIMAS (Nasution et al., 2024) and gender mainstreaming policies in water resource conservation (Ministry of Women's Empowerment and Child Protection, 2019). Although these studies are more gender-sensitive, they are predominantly situated in rural contexts and have yet to fully address the distinctive characteristics of densely populated urban riverbank settlements. The third strand comprises the international literature on feminist political ecology and gender–water relations (Sultana, 2011; Harris, 2009; Cole, 2017; Cole & Ferguson, 2015; Cole et al., 2020; Loehr et al., 2022). This literature offers substantial theoretical insights, but much of it is grounded in contexts characterized by water scarcity, rural settings, or tourism areas.

This mapping reveals a clear research gap: no study has specifically examined clean water and sanitation management in Banjarmasin's riverbank settlements as a gendered form of commons governance. To date, technical and gender issues have largely proceeded along separate analytical paths. Technological failures have been explained in technical terms, while gender inequalities have been addressed primarily as normative concerns, without bringing the two together within a single institutional explanation. Addressing this gap requires an analytical framework that can connect institutional arrangements with the unequal distribution of roles, authority, and knowledge within households and communities.

Ostrom's commons governance framework provides one starting point for making this connection. Contrary to the assumption that common resources inevitably deteriorate without privatization or centralized state control, Ostrom (1990) demonstrates that communities can govern shared resources sustainably when appropriate institutional arrangements are in place. Among the principles relevant to the present study are clearly defined users and resource boundaries, locally appropriate rules, community-based monitoring, graduated sanctions, and, critically, opportunities for users to participate in shaping the rules that govern resource use. In the context of Banjarmasin, rivers and their surrounding spaces can be understood as a shared resource used by multiple actors, including households for bathing, washing, and sanitation, fishers, water-transport operators, and local government. The central issue, therefore, is not simply whether institutions exist, but whose interests and experiences are incorporated into the rules through which the commons are governed. From this perspective, women's participation becomes an institutional question: women may be among the most intensive everyday users and managers of household water and sanitation, yet this does not necessarily translate into an equivalent role in designing or modifying the institutions that govern the resource (Bruns &

Meinzen-Dick, 2000; Molle et al., 2009).

Commons governance alone, however, does not fully explain why particular forms of knowledge become authoritative within these institutions. Feminist standpoint theory provides a complementary analytical lens by emphasizing that knowledge is situated in social relations and that the everyday experiences of marginalized groups can reveal dimensions of social reality that remain invisible from dominant institutional positions (Harding, 2004). Smith (2004) similarly argues that conventional knowledge production often privileges institutional perspectives while rendering women's everyday experiences as private or domestic matters rather than as legitimate sources of social and political knowledge. Applied to water and sanitation governance, this perspective directs attention to women's practical knowledge of household water use, sanitation practices, periods of environmental risk, and strategies for coping with infrastructural limitations. The issue is therefore not simply whether women are present in community forums, but whether the knowledge derived from their everyday experience is recognized as legitimate knowledge for institutional decision-making. This distinction is important because numerical participation does not necessarily alter decision-making if the criteria for valid knowledge remain defined primarily by technical or institutional actors (Momsen, 2010; Resurrección, 2017; Rocheleau et al., 1996; Moser, 1993).

Bringing these two perspectives together allows the study to examine water and sanitation governance at two interconnected levels. Commons governance draws attention to the institutional arrangements through which shared resources are regulated, particularly the distribution of participation, monitoring, rules, and authority. Feminist standpoint theory adds an epistemic dimension by asking whose everyday experiences are recognized as legitimate knowledge in shaping those arrangements. The combination therefore makes it possible to examine not only whether women participate in water and sanitation governance, but also whether their position as everyday users and managers gives them meaningful influence over institutional rules and decisions. The analytical concern is consequently the relationship between responsibility, authority, and knowledge: who performs the work of managing water and sanitation, who has the authority to determine how that work is organized, and whose knowledge is treated as legitimate in making those decisions.

The novelty of this article lies in bringing these two analytical perspectives together to examine an urban river-based context in which water is physically abundant but access to safe and adequate water and sanitation services remains uneven. Rather than treating technological shortcomings and gender inequality as separate problems, the study examines how institutional arrangements may reproduce both simultaneously. This perspective also extends gender–water scholarship beyond contexts primarily characterized by physical water scarcity by examining how abundance of water can coexist with inadequate access, uneven responsibility, and unequal institutional authority.

Based on this framework, the article addresses two research questions: (1) what are the patterns of gender relations in the everyday management of clean water and sanitation in

Banjarmasin's riverbank settlements; and (2) how can these patterns be explained through the combined lens of commons governance and feminist standpoint theory? Accordingly, the study has three objectives. First, it maps the division of roles and authority between women and men in the management of clean water and sanitation in these settlements. Second, it explains this division as both a problem of institutional design and a problem of knowledge recognition. Third, it formulates recommendations for more gender-responsive water resource governance at the village administrative level (*kelurahan*). The findings are expected to provide an initial empirical mapping that can serve as a foundation for subsequent field research and inform policies concerning the management of urban riverbank settlements.

RESEARCH METHODS

This study employed a descriptive qualitative approach (Creswell & Poth, 2018) that combined secondary data analysis (*desk research* or *documentary analysis*) as the primary source of evidence with semi-structured interviews as supporting primary data. Documentary analysis was selected because it provides access to policy trajectories and empirical findings across different periods that cannot be captured through a single round of interviews, while also serving as a means of source triangulation (Bowen, 2009). Within this research design, interviews were not intended to provide a basis for generalization but rather to examine the extent to which patterns identified in the literature corresponded with the lived experiences of residents in the study area.

Three types of documents were used as secondary data sources: (1) national scientific journal articles indexed in SINTA and international journals indexed in Scopus addressing issues of water, sanitation, gender, and riverbank settlements, both in the context of Banjarmasin and in comparative cases from Indonesia and other countries; (2) official reports and publications issued by government institutions, including Statistics Indonesia and the Ministry of Women's Empowerment and Child Protection; and (3) local and regional policy documents, particularly Banjarmasin City Regional Regulation No. 15 of 2016 concerning River Management. Documents were selected based on thematic relevance, clarity of the publishing institution or source, and a publication period covering the previous ten years, with the exception of classical theoretical references retained as conceptual foundations.

Primary data were collected through semi-structured interviews with three female informants selected purposively (Patton, 2015). The inclusion criteria were: (a) residing in a settlement along the Martapura River in Banjarmasin; (b) serving as the primary person responsible for managing everyday household water and sanitation needs; and (c) having either participated in or been a beneficiary of community-based water and sanitation programs in their residential area, or being a direct user of facilities provided through such programs. The three informants were positioned in this study as both users and everyday managers of household water and sanitation resources, which constitutes the analytical focus of the article. They were

not treated as formal institutional representatives or expert informants. A brief profile of the three informants is presented in Table 1.

Tabel 1 Informant Profiles and Capacities

Informant Code	Residential Location	Role in the Household	Capacity in Water and Sanitation Programs
Informant 1	Martapura Riverbank settlement, Banjarmasin	Primary manager of household water and sanitation needs	Beneficiary and technical implementer: maintained the cleanliness of communal bathing, washing, and toilet facilities and participated in socialization activities on the use of Tripikon-S
Informant 2	Martapura Riverbank settlement, Banjarmasin	Primary manager of household water and sanitation needs	Beneficiary and technical implementer: participated in socialization activities on the use and maintenance of Tripikon-S
Informant 3	Martapura Riverbank settlement, Banjarmasin	Primary manager of household water and sanitation needs	Daily user of household water and sanitation facilities; had never participated in decision-making forums at the kelurahan level

Source: Primary data processing, 2025.

The interviews were conducted face-to-face at each informant's residence using an open-ended interview guide covering three main areas: the informants' experiences in meeting everyday household water needs; their involvement in community decision-making forums, including neighborhood association meetings (*RT/RW*) and *kelurahan* deliberations; and their views on the opportunities available for women's participation in public decision-making. To protect confidentiality, the informants' identities were anonymized using the codes Informant 1, Informant 2, and Informant 3, and all attributes that could potentially reveal their personal identities were omitted.

Data analysis followed the interactive model proposed by Miles, Huberman, and Saldaña (2014), consisting of data condensation, data display, and conclusion drawing and verification. More specifically, the analysis involved reducing data from documents and interview transcripts, conducting thematic categorization based on the two theoretical frameworks employed in the study, and developing a narrative interpretation that integrated findings from the literature with those from the interviews. Data credibility was strengthened through source triangulation by comparing patterns emerging from policy documents, scholarly publications, and informants' accounts (Bowen, 2009). Given the limited number of informants, the findings should be understood as an initial mapping rather than as evidence intended to be generalized to all riverbank settlements in Banjarmasin.

RESULTS AND DISCUSSION

Riverbank Settlements and Sanitation Problems in Banjarmasin

Before the development of land-based transportation infrastructure, the Banjar people built stilt houses and floating houses along the rivers, which served as their primary transportation routes. The dense settlement patterns along riverbanks are therefore the result of a long history of river-based culture (Ideham et al., 2007; Wahyu, 2020). This geographical heritage presents significant contemporary challenges. Research on informal settlements in Sungai Bilu Village found that limited land availability and high building density have led many households to discharge domestic wastewater directly into the river (Rahman et al., 2019). Similar conditions have been observed in other riverine cities in Kalimantan, where limited space and institutional fragmentation constitute major constraints on the implementation of decentralized sanitation systems.

The Banjarmasin municipal government has replaced conventional septic tanks in settlements along the Martapura River with Tripikon-S technology, a vertical fecal-waste treatment system that can be installed over water, as a technical response to land constraints. Efficiency tests have shown that this technology can reduce most *Escherichia coli* bacteria, but wastewater continues to enter the river and has not fully met the applicable water quality standards (Normasari et al., 2017; Rachman, 2018). Training on the construction and maintenance of Tripikon-S provided to Community Self-Reliance Organizations in Kuin Selatan Village further indicates that the sustainability of this technology depends heavily on active community participation in daily maintenance (Agustina et al., 2024), a form of household labor that is empirically performed predominantly by women. Thus, the gap between the expected performance of the technology and its performance in practice lies precisely in an area that has often been overlooked in planning: the gendered labor of everyday maintenance.

Women as Primary Managers but Marginalized from Formal Decision-Making

Research on women's participation in the PAMSIMAS program in Buluh Duri Village provides a relevant basis for understanding the situation in Banjarmasin. Although women actively use clean water on a daily basis and participate in the technical implementation of the program at the community level, their involvement in the decision-making structures of drinking water and sanitation management groups—for example, as group leaders or policy formulators—is substantially lower than their participation in technical implementation (Nasution et al., 2024). This finding indicates that women's involvement in community-based programs tends to stop at the implementation stage, while planning and rule-making remain largely closed to them.

International literature likewise confirms this pattern of inequality. Sultana's (2011) study in Bangladesh found that women's relationship with water is characterized by emotional attachment and anxiety because they bear responsibility for collecting, purchasing, storing, and distributing water, while male-dominated structures continue to control water infrastructure.

Cole (2017), in a study of Labuan Bajo, East Nusa Tenggara, identified findings more closely aligned with the Indonesian context: patriarchal cultural norms, socioeconomic status, and proximity to water sources interact to shape gendered power relations in access to water. A subsequent study in the same location emphasized that improvements in water and sanitation services can only have inclusive impacts when the needs of different user groups are identified from the planning stage (Loehr et al., 2022). Harris (2009) refers to this pattern as a gendered dimension of privatization, devolution, and marketization in water governance, while Cole and Ferguson (2015) and Cole et al. (2020) emphasize that the relationship between gender and water development remains insufficiently addressed in research across different parts of the world. The riverbank settlements of Banjarmasin can be understood as one manifestation of this gap, with one distinctive feature: the problem is not physical water scarcity but a scarcity of safe and adequate water amid an abundance of surface water.

Analysis through the Theory of Commons Governance

Based on Ostrom's (1990) institutional principles, water and sanitation management in the Martapura Riverbank settlements exhibits several functional elements of collective governance, including the existence of Community Self-Reliance Organizations as management units at the *kelurahan* level (Agustina et al., 2024) and formal regulations governing river management through Regional Regulation No. 15 of 2016 (Banjarmasin City Government, 2016). However, one of Ostrom's eight design principles—namely, inclusive participation in the formulation of rules—appears not to have been fully realized for women as a user group. Women participate as technical implementers, for example by maintaining Tripikon-S systems or using PAMSIMAS facilities on a daily basis, but they are rarely positioned as decision-makers or policy formulators in community-level forums concerned with river management.

This condition suggests that the institutions established for collective resource management may not fully represent the actual needs of key user groups. Consequently, technical decisions, such as determining the location of Tripikon-S units or scheduling the maintenance of communal bathing, washing, and toilet facilities, may not fully correspond to the actual patterns of water and sanitation use among women and children. Molle et al. (2009) caution that river basin closure in urban areas, as observed in Banjarmasin, can intensify the vulnerability of user groups that depend most heavily on water resources for their everyday needs when governance institutions are exclusive.

Analysis through Feminist Standpoint Theory

From a feminist theoretical perspective, women's knowledge of water-use patterns—for example, when river water is most contaminated, the household strategies used to cope with inadequate sanitation, and the health risks faced by children as a result of poor sanitation—should serve as an important reference point in policy formulation (Smith, 2004; Harding, 2004). However, as Resurrección (2017) notes, despite the shift from the Women, Environment and Development perspective toward feminist political ecology, many water and sanitation

development programs continue to treat women as target beneficiaries rather than as legitimate knowledge subjects.

From this perspective, women's absence from river policy-making forums in Banjarmasin is not merely a matter of quantitative representation but also a matter of epistemic injustice: knowledge derived from women's lived experiences is regarded as less legitimate than technical-institutional knowledge, which is generally controlled by male actors within government and technical groups. Nevertheless, as Moser (1993) emphasizes through the gender planning framework, practical gender needs, such as everyday access to water and sanitation, can only be addressed sustainably when strategic gender needs are also addressed, particularly women's involvement in decision-making structures

Interview Findings from Women Informants and Theoretical Analysis

Interviews were conducted with three women living in the riverbank area of Banjarmasin to broaden and sharpen the analysis of findings from the literature. The three informants consistently identified three major and interconnected issues: (a) their position as water users rather than actors involved in policy formation; (b) their limited involvement in public spaces; and (c) gender relations within the household that place primary responsibility for securing water for the family on women. The following sections summarize and analyze these three themes.

Women as Water Users, Not Policy-Makers

Informants 1 and 2 stated that their involvement in clean water and sanitation programs had so far been limited to serving as beneficiaries or technical implementers in the field, such as maintaining the cleanliness of communal bathing, washing, and toilet facilities or attending socialization sessions on the use of Tripikon-S. They had never been invited or directly involved in discussions concerning water and river management policies at the *kelurahan* level. They also stated that community leaders, *kelurahan* officials, and community representatives in such forums were generally men. This finding provides empirical support for the pattern identified in the PAMSIMAS literature: a gap exists between women's active role as users and their involvement in formal decision-making structures.

Viewed through the lens of *commons governance* theory (Ostrom, 1990), this finding indicates that the principle of inclusive participation has not yet been fully incorporated into the institutional design of collective resource management in Banjarmasin. The primary user group—women—is positioned mainly as implementers of policies formulated by others. From a feminist theoretical perspective (Harding, 2004; Smith, 2004), this condition constitutes a form of epistemic injustice. Women's knowledge of everyday water-use patterns is not treated as a legitimate source of knowledge for policy formulation, resulting in their voices being structurally excluded from decision-making processes even though they are among those who directly understand these problems most closely.

Limited Participation in Public Spaces

All three informants stated that they were generally less involved in public activities, such as *kelurahan* deliberative meetings, *RT/RW* meetings, and meetings concerning infrastructure

development programs. The reasons they identified included limited time due to domestic workloads, a lack of confidence in speaking in male-dominated forums, and social norms that position public and institutional affairs as men's domain, while household matters such as water and sanitation are regarded as women's responsibilities. This pattern is consistent with Cole's (2017) findings in Labuan Bajo concerning the ways in which patriarchal cultural norms shape gendered power relations in public spaces related to water, and with Sultana's (2011) analysis of the emotional burdens experienced by women involved in water management without having equivalent authority.

Within the framework of *commons governance*, limited participation in public spaces directly reduces the representation of women as a user group in mechanisms for monitoring and establishing collective rules concerning shared resources. As a result, the rules that emerge tend to reflect the interests of more dominant social groups, particularly men (Ostrom, 1990; Bruns & Meinzen-Dick, 2000). From a feminist perspective, this situation reflects masculine institutional bias in the organization of public spaces. Smith (2004) argues that formal forums are structured in ways that are more accessible to men, thereby marginalizing women even when no explicit prohibition prevents them from participating.

Gender Relations within the Household: Women as Primary Water Providers

The three informants agreed that, within their household structures, women consistently bear responsibility for providing water for cooking, washing, bathing, and maintaining children's cleanliness, regardless of whether they are full-time homemakers or also engage in income-generating activities. The informants viewed this division of labor as something that was simply "the way it should be" because it had been practiced across generations and was regarded as part of women's maternal role. This perception is consistent with the broader pattern identified by the Ministry of Women's Empowerment and Child Protection (2019) concerning women's responsibility for managing household water resources.

From a feminist theoretical perspective, these gender relations within the household demonstrate that women acquire highly detailed and practically useful situated knowledge, for example about when river water is most contaminated or turbid, how to cope with limitations in access to clean water, and the effects of poor sanitation on children's health. Yet this knowledge remains confined to the domestic sphere, which is often regarded as "non-political," and is rarely taken seriously in formal policy-making. From the perspective of *commons governance*, however, women's structurally assigned responsibility for providing water should provide a strong basis for granting them greater authority within institutions governing the commons, because they possess both direct incentives and practical knowledge concerning how these resources can be sustained (Ostrom, 1990). As Moser (1993) demonstrates through the concepts of practical and strategic gender needs, meeting women's practical needs as household water providers alone will not produce equitable structural change; such change requires their strategic needs to be addressed as well, particularly their meaningful participation in decision-making structures

Synthesis: Toward Gender-Equitable Water Governance

By bringing together the two theoretical frameworks and the interview findings, it can be concluded that water and sanitation problems in Banjarmasin's riverbank settlements are not merely infrastructural and technical issues, such as the efficiency of Tripikon-S. They are also interconnected epistemic and institutional problems that are directly confirmed by the lived experiences of women informants. The three interview themes—women's position as users without policy-making authority, their limited participation in public spaces, and their burden of providing water within the household—point to a common thread: inclusive collective governance requires explicit recognition of women's perspectives as holders of practical knowledge, while epistemic recognition of women can only produce meaningful effects when translated into institutional structures that grant them decision-making authority. These two components cannot function independently because they are mutually dependent.

CONCLUSION

This study, based on secondary data and interviews with women informants, shows that women living in Banjarmasin's riverbank settlements empirically serve as the primary users and managers of household clean water and sanitation, yet their involvement in formal decision-making institutions concerning river governance and sanitation infrastructure remains largely limited to technical implementation. The interviews directly confirmed three interconnected patterns: women are positioned primarily as water users rather than policy-makers; their participation in public decision-making spaces remains limited; and gender relations within households place primary responsibility for securing water for the family on women. This pattern is consistent with findings from PAMSIMAS in other parts of Indonesia and with international scholarship on gender–water relations. From the perspective of *commons governance* (Ostrom, 1990), this inequality can be understood as a failure to realize inclusive participation in institutional design, while from a feminist perspective (Harding, 2004; Smith, 2004), it represents a form of epistemic injustice that overlooks the fact that women are the primary providers of household water and possess situated knowledge derived from their everyday experience. Based on these findings, the study proposes three strategic directions: strengthening formal mechanisms for women's representation within community-based water and sanitation management institutions at the *kelurahan* level; integrating women's practical knowledge into the technical planning of sanitation programs, including decisions concerning the location and design of Tripikon-S systems; and undertaking further participatory qualitative research involving a broader range of women informants and relevant institutional actors to deepen the initial mapping presented in this article.

PERNYATAAN ETIKA PENELITIAN

This study was conducted in accordance with established ethical principles, including informed consent, protection of informants' confidentiality, and respect for local cultural values. Special consideration was given to participants from vulnerable groups to ensure their safety, comfort, and equal rights to participate. No external funding was received, and the authors declare no conflict of interest. All data and information presented were collected through valid research methods and have been verified to ensure their accuracy and reliability. The use of artificial intelligence (AI) was limited to technical assistance for writing and language editing, without influencing the scientific substance of the work. The authors express their gratitude to the informants for their valuable insights, and to the anonymous reviewers for their constructive feedback on an earlier version of this manuscript. The authors take full responsibility for the content and conclusions of this article.

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