

# **Integrating Islamic Ethics into Sustainable Water Governance: A Malay Civilization Perspective on Public Utility Reform in Indonesia**

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## **Abstract**

Water played a central role in shaping the identity and sustainability of human civilization. In the context of Malay civilization, water is more than a natural resource—it represents purity, balance, and collective responsibility guided by Islamic values. This paper discusses how sustainable water governance can be strengthened through the integration of Islamic human capacity and ethical principles in managing public water utilities in Indonesia. The research adopts a qualitative case study approach that explores institutional reform within regional public water companies. Findings indicate that sustainability in water governance is not only achieved through technological improvements or financial restructuring, but also through the cultivation of ethical awareness, leadership integrity, and community participation based on the values of trust, justice, and public welfare. The study also reveals that the incorporation of Islamic ethics encourages accountability and equity, reinforcing the global agenda of Sustainable Development Goal (SDG) 6 on clean water and sanitation. By situating water management within the broader framework of Malay Islamic civilization, this research contributes to a deeper understanding of how faith, culture, and governance can interact to promote sustainable public services and environmental management. While previous studies have addressed governance reform in technical and institutional terms, few have explored how Islamic ethical values embedded in Malay civilization contribute to sustainable public utility transformation.

**Keywords:** Islamic Ethics; Sustainable Water Governance; Malay Civilization; Public Utility Reform; Human Capacity; Environmental Stewardship; Indonesia.

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## Introduction

Water is the most essential element in life and the foundation for the continuation of human civilization. In Malay–Muslim societies, water is not only a natural resource but also holds deep spiritual and moral significance, reflecting sanctity, balance, and a trust that must be maintained for the common good. These values align with the Islamic principles of justice (adl), responsibility (khalifah), and sustainability (maslahah), which philosophically position humans as stewards of the earth responsible for the sustainability of water resources [1].

In the practice of providing clean water, particularly through public institutions such as Regional Drinking Water Companies (PDAMs), the challenges that arise are not only technical but also stem from institutional and social aspects. Many PDAMs in Indonesia still face persistent problems such as low service coverage, high rates of water loss or Non-Revenue Water (NRW), and limited operational efficiency [2]. This situation demonstrates that technical improvements alone are insufficient without strengthening governance and human capacity within these institutions.

Several studies have highlighted that water policy implementation in Indonesia often suffers from inconsistency between regulations and their practical application due to weak institutional capacity, limited financial resources, and regulatory overlaps [3]. These conditions threaten the sustainability of drinking water services and reduce public trust in government-owned utilities. On a global scale, water governance reform has evolved toward an inclusive and adaptive approach that emphasizes collaboration across institutions and social accountability. Sustainable water governance depends on stakeholder engagement, institutional adaptability, and context-specific learning processes rather than rigid technocratic models [4].

Previous research also indicates that successful water governance reform cannot rely solely on technical interventions, but must integrate social, cultural, and moral dimensions [5]. However, translating global governance frameworks into the local Indonesian context requires a values-based approach rooted in local traditions and belief systems. In regions with strong Islamic and Malay cultural heritage, water management can be enriched with ethical concepts such as amanah (trust) and khalifah (vicegerency), emphasizing moral responsibility toward society and the environment [6]. Integrating these ethical foundations not only supports institutional legitimacy but also fosters community participation and environmental stewardship. The sustainability of public water utilities in North Sumatra cannot be separated from community trust and the moral responsibility of leaders [2].

Existing literature on water governance and institutional reform has primarily focused on regulatory frameworks, financing mechanisms, and efficiency indicators [7]. Few studies have explored how faith-based ethics and Malay–Islamic values can shape public water governance in Indonesia. This creates a research gap in understanding how moral–cultural dimensions influence institutional behavior, accountability, and sustainability outcomes within public utilities.

Therefore, the scientific novelty of this study lies in conceptualizing Islamic human capacity as a transformative element in institutional reform toward sustainable water governance. By linking Islamic moral values with Malay civilizational perspectives, this research provides a contextual framework that integrates ethics, culture, and governance in the reform of local water utilities.

The main research problems addressed in this study are: (1) How do Islamic moral principles shape institutional reform in regional water utilities? and (2) In what ways can Islamic human capacity enhance governance sustainability? Accordingly, this study aims to examine the integration of Islamic ethical values into the governance practices of PDAMs in Indonesia and to analyze their implications for accountability, efficiency, and the sustainability of water services. The results are expected to contribute to both theoretical enrichment and

practical improvement of sustainable water governance models that are socially and spiritually grounded.

## Literature Review

Water governance has been extensively discussed within the global sustainability framework, particularly emphasizing the need for institutional adaptability, inclusiveness, and accountability. Adaptive water governance is essential to address complex socio-environmental challenges caused by climate change and population growth. Effective water management requires cross-sectoral coordination, community engagement, and transparent policy mechanisms to ensure long-term sustainability [8].

In the Indonesian context, found that public water utilities (PDAMs) face persistent challenges related to institutional performance, low service coverage, and inefficiency [9]. These structural weaknesses are often rooted in weak governance and fragmented coordination among stakeholders, policy inconsistency and limited local capacity hinder the achievement of equitable water distribution [10].

However, recent studies have begun to explore non-technocratic approaches by integrating ethical, cultural, and spiritual dimensions into governance systems. Faith-based governance frameworks in Malaysia encourage moral accountability and enhance institutional legitimacy [11]. Religious values can influence public utility management by fostering trust and fairness, particularly in Muslim-majority societies [6].

The integration of Islamic ethics—anchored in the values of amanah (trust), adl (justice), and khalifah (stewardship)—has been recognized as a potential framework for sustainability. Hamdi et al. [7] emphasize that Islamic environmental ethics promote stewardship and collective responsibility, aligning human action with divine trust (amanah). This ethical worldview as a synthesis between faith and governance, where leadership and institutional reform are expressions of spiritual devotion Within the Malay-Islamic civilization [1].

While global water governance literature often focuses on technical or managerial reforms, limited attention has been given to how cultural and religious worldviews shape governance outcomes. This gap justifies the need for context-specific research that examines how Islamic moral principles and Malay cultural traditions can contribute to sustainable water utility reform. The present study therefore builds upon these theoretical insights to develop a framework that links Islamic ethics, human capacity, and institutional transformation within the Indonesian public water governance system.

### 2.1 Conceptual Framework

The conceptual framework illustrates the relationship between Islamic ethics and sustainable water governance. There is the figure of conceptual framework:

Figure 1. Conceptual Framework

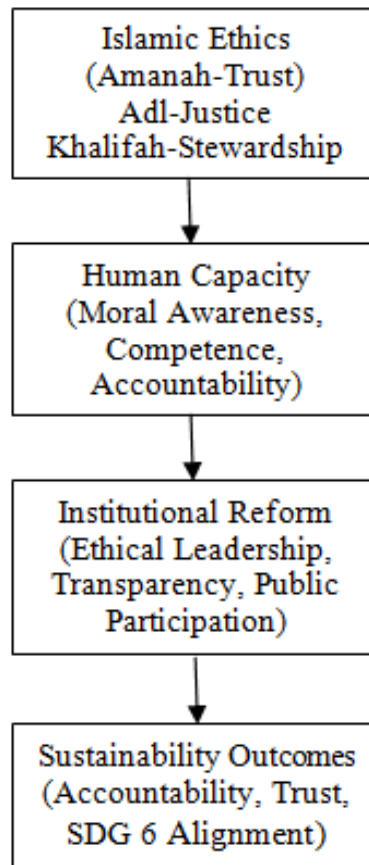


Figure 1 presents the conceptual framework of this research. It shows how Islamic ethical values serve as the foundation for sustainable water governance within the Malay–Islamic cultural context. The framework begins with Islamic ethics, represented by the principles of *amanah* (trust), *adl* (justice), and *khalifah* (stewardship). These principles shape the attitudes, motivations, and sense of responsibility of individuals involved in managing public water institutions.

When these ethical foundations are internalized, they strengthen human capacity, which refers to the moral awareness, professional competence, and accountability of individuals within an organization. A strong human capacity becomes the driving force for institutional reform, where values of ethical leadership, transparency, and community participation are put into practice in everyday governance.

The outcome of these processes is sustainability, reflected in improved accountability, strengthened public trust, and alignment with the Sustainable Development Goal (SDG) 6 on clean water and sanitation.

This framework highlights that sustainable governance is not only about technical or financial improvements, but also about cultivating moral character and ethical responsibility. The cultural and spiritual dimensions of the Malay–Islamic worldview act as an invisible force that connects individual ethics, institutional integrity, and collective well-being.

## Research Methodology

This study employed a qualitative case study approach to investigate how Islamic ethical values and human capacity influence sustainable water governance in Indonesia. The case study design was selected because it enables in-depth exploration of values, leadership, and

institutional interactions in real-world contexts, without aiming for statistical generalization but rather interpretive and contextual understanding [1].

### 3.1 Research Approach

A qualitative case study approach was adopted to explore the dynamics of ethical integration and institutional reform within public water utilities. The approach allows a holistic analysis of the interrelationships between human capacity, moral values, and institutional behavior, providing rich insights into how Islamic ethics shape governance outcomes [12].

### 3.2 Study Sites

The study was conducted at Regional Drinking Water Companies (Perumda Air Minum/PDAMs) in North Sumatra, specifically in Medan City and Tanjungbalai City it shows in figures below:

**Figure 2. Study sites of PDAMs in Medan and Tanjungbalai, North Sumatra, Indonesia.**



These locations represent regions with strong Malay–Islamic traditions currently engaged in institutional reforms to enhance service quality and public accountability. The PDAMs were selected based on three main criteria:

- Active implementation of reform and innovation programs;
- Organizational culture grounded in Islamic ethical values;
- Institutional openness and willingness to engage in academic research.

This case selection enables the study to capture both managerial and cultural aspects of institutional transformation.

### 3.3 Data Collection

Data were collected from January to August 2025 using multiple qualitative techniques to ensure validity and credibility, including interviews, document analysis, observation, and scriptural-literature review.

#### a. Interviews

Semi-structured interviews were conducted with 25 participants, including directors, senior managers, technical staff, local officials, and community representatives. The interviews explored the embodiment of Islamic ethical concepts such as amanah (trust), adl (justice), and khalifah (stewardship) in daily decision-making and reform initiatives.

b. Document Review

Institutional reports, strategic plans, and policy documents were analyzed to understand accountability mechanisms and ethical guidance. National and regional water policies were reviewed to connect local reforms with broader governance frameworks.

c. Observation

Field observations were conducted during meetings, workshops, and public outreach activities. Behavioral indicators such as teamwork, leadership transparency, and employee responsiveness to public concerns were documented systematically.

d. Scriptural and Literature Review

Relevant Qur'anic verses, hadiths, and Islamic ethical writings were reviewed to interpret findings within the moral context of Malay–Islamic civilization. Ethical principles such as *maslahah* (public welfare) and *istiqamah* (consistency in righteous action) were employed as interpretive tools linking spirituality with governance.

### 3.4 Data Analysis

Thematic analysis was applied through iterative coding, categorization, and synthesis of emerging patterns. Themes such as ethical leadership, accountability, stewardship, and public participation were identified. Triangulation among interviews, observations, and document reviews enhanced the reliability and trustworthiness of findings [4]. Reflexivity was maintained by acknowledging the researcher's positionality and cultural background throughout the interpretation process.

### 3.5 Ethical Considerations

All participants were informed of the study's objectives, and their consent was obtained before participation. Confidentiality was maintained through anonymization of names and sensitive information. Ethical principles of honesty (*sidq*), respect (*ikram*), and collective benefit (*maslahah*) guided the research conduct, ensuring compliance with both academic and Islamic ethical standards.

## Results

### 4.1 Ethical Leadership and Institutional Transformation

The findings reveal that ethical leadership rather than technological modernization—was the most influential factor driving reform in the observed PDAMs. Leaders who embodied *amanah* (trustworthiness) and *adl* (justice) were successful in establishing an internal culture of accountability, integrity, and trust. Employees demonstrated greater motivation and commitment when they perceived fairness, sincerity, and transparency from their leaders. For instance, in one PDAM, the director introduced open budgeting sessions where employees could access financial information and question expenditure allocations. This practice not only minimized internal suspicion but also increased employees' sense of belonging and ownership in organizational decision-making. These behaviors correspond with the Islamic conception of leadership as *ibadah* (devotion), in which service to the public is both a professional duty and a spiritual act accountable to God [13].

Such leadership dynamics mirror findings in Malaysia and Jordan, where faith-based governance reforms enhanced institutional legitimacy and organizational resilience [14]. Similar studies emphasize that ethical leadership fosters long-term trust and social capital—key drivers of institutional transformation in public utilities. This study extends those findings by demonstrating *how* ethical principles embedded in Malay–Islamic civilization serve as a transformative force for reforming PDAM governance in Indonesia.

## 4.2 Human Capacity and the Ethics of Khalifah

Human capacity emerged as the second crucial pillar of sustainability transformation. Training programs within the studied PDAMs increasingly incorporated *khalifah* (stewardship) ethics and *maslahah* (public welfare) values. This integration encouraged employees to perceive their roles not merely as technical operators, but as stewards responsible for managing divine resources.

During programs on Non-Revenue Water (NRW) reduction, trainers emphasized that preventing water loss is not only a technical necessity but a moral obligation to avoid wasting blessings entrusted by Allah. This framing generated intrinsic motivation among employees, fostering interdepartmental collaboration and commitment to efficiency.

The concept of *Islamic human capacity*, introduced in this study, refers to the synthesis of professional competence, moral awareness, and social accountability. It reflects *how* spiritual reasoning enhances operational effectiveness by aligning technical decisions with ethical purpose. Integrating spiritual motivation into institutional development leads to more adaptive and enduring reform outcomes. The results demonstrate that embedding ethical frameworks into human resource systems enhances the sustainability of public water services.

## 4.3 Community Participation and the Spirit of Maslahah

Community participation was identified as a decisive determinant of governance sustainability. PDAMs that actively involved community members in decision-making—particularly in tariff adjustment and service monitoring—enjoyed higher public trust and reduced conflict.

In both Medan and Tanjungbalai, community engagement activities that used religious narratives—such as describing clean water provision as *sadaqah jariyah* (continuous charity) or a form of *amanah* (trust)—were notably more successful. These cultural-religious framings transformed public cooperation from transactional interaction into shared moral responsibility.

Inclusive governance models rooted in local cultural values tend to be more legitimate and resilient. The application of *maslahah* as a guiding principle ensures that community engagement promotes both equity and environmental care, generating a spiritually grounded model of participatory governance.

Table 1 provides a summary of key community engagement mechanisms and their corresponding outcomes.

**Table 4.1.** Community Engagement Practices and Their Impacts

No.	Engagement Practice	Ethical Reference	Observed Impact
1	Open tariff discussion forums	<i>Amanah, Adl</i>	Increased trust, reduced complaints
2	Religious-based outreach ( <i>sadaqah jariyah</i> )	<i>Maslahah, Ikhlas</i>	Enhanced public cooperation
3	Community monitoring teams	<i>Khalifah</i>	Improved data accuracy, reduced leakage

## 4.4 Policy and Institutional Synergy

Despite significant progress, institutional reform continues to face structural challenges, particularly in coordination between local governments and PDAMs. Overlapping regulations, fragmented responsibilities, and inconsistent financial management remain major constraints. These governance gaps often lead to project delays and reduced efficiency.

However, PDAMs integrating Islamic ethical frameworks into their management systems demonstrated stronger adaptability and transparency. A notable innovation was the introduction

of *muhasabah* (self-evaluation) sessions, which served as moral audits complementing financial and technical assessments. These sessions encouraged reflection on ethical compliance, teamwork, and accountability to both the public and the Creator.

**Figure 3. Institutional reform process integrating Islamic ethical principles in PDAM management.**



Conceptualized the Malay–Islamic synthesis as a governance ethos that harmonizes faith, reflection, and administrative reform. It shows *why* faith-based governance frameworks can outperform purely bureaucratic models: because they cultivate self-correcting mechanisms grounded in ethical introspection.

#### 4.5 Integrating Faith, Culture, and Governance

Overall, this study demonstrates that integrating Islamic ethics within Malay civilization provides a holistic and contextually relevant foundation for sustainable water governance. PDAMs that internalized *amanah* (trust), *khalifah* (stewardship), and *maslahah* (public welfare) achieved tangible improvements in organizational performance, service delivery, and public trust.

These findings contribute to global sustainability discourse, particularly the achievement of Sustainable Development Goal (SDG) 6 on clean water and sanitation. They reinforce that moral and cultural dimensions are not peripheral but essential to achieving governance legitimacy and long-term resilience.

In essence, sustainability in the Malay–Islamic worldview embodies *moral equilibrium*—a balance between human welfare, environmental stewardship, and accountability to the Creator. This study’s contribution lies in demonstrating *how* Islamic human capacity operates as a transformative driver of institutional reform, offering a culturally grounded model for future water governance in Indonesia and other Muslim-majority contexts.

#### Conclusion

This study explored how sustainable water governance can be strengthened through the integration of Islamic ethical values and human capacity development within the framework of Malay civilization. Using case studies of regional water utilities (PDAMs) in North Sumatra, the research revealed that sustainability is not merely a technical or financial issue—it is deeply rooted in the moral and cultural fabric of society.

Three major insights emerged from the findings:

1. Ethical leadership—anchored in *amanah* (trust) and *adl* (justice)—is the moral foundation of institutional reform. Leaders who demonstrate transparency and fairness inspire a sense of collective responsibility and nurture organizational integrity.
2. Islamic human capacity—built through the values of *khalifah* (stewardship) and *maslahah* (public welfare)—transforms routine work into moral action. Employees perceive their roles

not only as professional duties but as part of their spiritual obligation to protect community resources.

3. Community participation—framed by cultural and religious narratives—enhances public trust and legitimacy. When citizens perceive water as both a public right and a sacred trust, they become active collaborators in sustaining water resources.

The research concludes that the integration of Islamic ethics in governance is not an alternative to modern management, but a complementary force that strengthens accountability, transparency, and sustainability. Within the Malay–Islamic worldview, good governance is a form of stewardship—where managing water equates to preserving life, dignity, and balance in society.

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