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The Prophetic Mud Standard: A Comprehensive Jurisprudential, Socio-Technical, and Ecological Critique of Water Extravagance in Ritual Purification

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Abstract: Ritual purification (Wudu) is a fundamental Islamic practice, yet contemporary implementation often results in significant water waste (Israf). This study analyzes the Prophetic benchmark of one Mud—approximately 600 to 775 ml—against modern consumption patterns in mosques. Using a mixed-methods approach, including historical metrological analysis and a review of empirical data from Indonesian mosques, the research identifies a socio-technical mismatch between traditional values and modern plumbing systems. Findings indicate that modern practitioners consume between 2.47 and 7 liters per Wudu, representing a 300% to 1100% deviation from the Sunnah. The study proposes a synergistic model combining technical interventions, such as Water-Efficient Aerators (WEAs) and "transparent tank" designs, with behavioral changes rooted in "Ecological Tauhid." Implementation of these strategies can achieve up to a 76% reduction in water usage, aligning contemporary worship with global sustainability goals.

Keywords: Ritual Ablution, Water Conservation, Israf, Prophetic Mud, Green Mosque, Environmental Fiqh.

Abstrak: *Pemurnian ritual (wudu) merupakan praktik fundamental dalam Islam, namun pelaksanaannya di masa kini sering kali menyebabkan pemborosan air (israf) yang signifikan. Penelitian ini menganalisis standar kenabian berupa satu mud—sekitar 600 hingga 775 ml—dibandingkan dengan pola konsumsi modern di masjid. Dengan menggunakan pendekatan metode campuran, termasuk analisis metrologi historis dan tinjauan data empiris dari masjid-masjid di Indonesia, penelitian ini mengidentifikasi adanya ketidaksesuaian sosio-teknis antara nilai-nilai tradisional dan sistem perpipaan modern. Hasil penelitian menunjukkan bahwa praktik wudu modern menghabiskan antara 2,47 hingga 7 liter air per sekali wudu, yang berarti terjadi penyimpangan*

sebesar 300% hingga 1100% dari tuntunan sunnah. Studi ini mengusulkan model sinergis yang menggabungkan intervensi teknis, seperti penggunaan Water-Efficient Aerators (WEAs) dan desain "tangki transparan", dengan perubahan perilaku yang berlandaskan konsep "Tauhid Ekologis". Implementasi strategi ini berpotensi mengurangi penggunaan air hingga 76%, sehingga praktik ibadah kontemporer dapat selaras dengan tujuan keberlanjutan global..

Kata kunci: *Wudu, Konservasi Air, Israf, Mud Nabi, Masjid Hijau, Fikih Lingkungan.*

1. Introduction

Within the core tenets of the Islamic tradition, water is far more than a mere natural resource; it is regarded as a profound sacred trust (Amanah) and the primordial biological source from which all life originates. The ritual of Wudu (ablution) functions as an essential gateway to worship, providing a dualistic physical cleansing and spiritual fortification in preparation for prayer. However, in the context of contemporary urban infrastructures, this sacred rite has inadvertently transformed into a primary point of intensive water consumption.

This modern trend stands in stark contrast to the ethical framework established by the Prophet Muhammad (PBUH), who offered a definitive and timeless critique of water extravagance. Even within the sacred boundaries of worship, he emphasized the gravity of conservation, most famously illustrated in his instruction to his companion Sa'd. The Prophet (PBUH) forbade excessive use of water "even if you are on the bank of a flowing river," thereby establishing that the sanctity of the act does not justify the squandering of the resource.

Despite these clear theological mandates, a widening chasm has emerged between Prophetic ideals and modern communal practices. This divergence is largely architectural and psychological; the historical transition from vessel-based water usage—which required deliberate effort—to modern continuous-flow plumbing systems has effectively dismantled the cognitive constraints that once naturally enforced moderation and mindfulness. Today, many Muslim-majority regions, particularly across the MENA (Middle East and North Africa) region and significant portions of Southeast Asia, are grappling with "extremely high" water stress. In this era of ecological instability, the restoration of the one-Mud standard is no longer merely a historical inquiry, but a critical ecological and spiritual imperative.

Consequently, this article seeks to bridge the gap between tradition and modernity. It aims to meticulously reconstruct the Prophetic metrology of the Mud, offer a rigorous

critique of modern wastage through the lens of empirical data, and ultimately propose a synergy of technical innovations and behavioral interventions designed to foster sustainable water management within the sanctuary of the mosque.

2. Research Methods

This study utilizes a robust mixed-methods research design, integrating diverse analytical frameworks to ensure a comprehensive understanding of both historical standards and modern consumption patterns.

Phase I: Qualitative Historical-Comparative Analysis The research begins with a qualitative historical-comparative approach, meticulously examining classical jurisprudential texts (fiqh) across the major Islamic schools of thought. This textual analysis is cross-referenced with extant archaeological evidence, specifically focusing on preserved measuring vessels from various Islamic epochs. The objective of this phase is to accurately triangulate the physical volume of the Mud and Sa', reconciling traditional descriptions with standardized metric measurements.

Phase II: Quantitative Synthesis and Benchmarking Secondly, the study moves into a quantitative phase by synthesizing empirical data harvested from multiple mosque-based water consumption audits. This includes primary case studies conducted in Indonesia—notably at Universitas Sebelas Maret and Universitas Pasundan—as well as comparative data from broader international contexts, such as Oman and Malaysia. By aggregating these datasets, the study establishes contemporary usage benchmarks, allowing for a precise calculation of the "wastage gap" between current practices and the Prophetic ideal.

Phase III: Technical Modeling and Impact Assessment Finally, the technical feasibility of conservation is evaluated through predictive modeling. This phase assesses the potential efficacy of specific technical and behavioral interventions, such as the installation of high-efficiency flow regulators and the implementation of "nudge-based" psychological prompts for worshippers. By modeling these variables, the study quantifies their projected impact on cumulative water savings, providing a data-driven roadmap for more sustainable mosque management.

3. Results and Discussion

3.1 Historical Metrology: Reconstructing the Prophetic Mud

The concept of the Prophetic Mud can be most accurately understood as a profoundly human-centered and experientially grounded unit of measurement, one that emerges not from abstract mathematical constructs but from the innate physical capabilities of the human body itself. More specifically, it is derived from the approximate volume of water that can be comfortably held within two average-sized hands when they are brought together and gently cupped in a natural gesture of collecting, containing, or lifting water. This embodied and intuitive mode of measurement reflects a broader epistemological framework within early Islamic practice, wherein physical experience, daily habit, and ritual embodiment are closely intertwined. Rather than relying solely on rigid, standardized instruments, this approach situates measurement within the lived reality of human action, thereby making it universally accessible across different contexts, cultures, and time periods.

Throughout the long trajectory of Islamic intellectual and legal history, scholars, jurists, and practitioners have undertaken extensive, careful, and methodologically diverse efforts to calibrate, preserve, and standardize the Mud as a reliable unit of measure. These efforts were not merely technical in nature but were deeply connected to the preservation of the integrity of ritual practice, particularly in acts of worship such as Wudu (ablution), where precise quantities could carry both symbolic and practical significance. However, despite these rigorous attempts at standardization, the historical record reveals the existence of nuanced variations in how the Mud was quantified and applied, especially between the prominent centers of Medina and Kufa. These regional differences were shaped by a variety of factors, including local customs, transmission chains of knowledge, variations in physical exemplars, and differing interpretive methodologies among scholars.

Over time, these discrepancies evolved beyond simple technical disagreements and became the subject of sophisticated jurisprudential discourse. One of the most notable manifestations of this intellectual engagement can be found in the discussions between Imam Al-Shafi'i and Abu Yusuf, a prominent student of Abu Hanifa. Their debate did not merely revolve around numerical precision but extended into broader questions of legal authority, methodological consistency, and the prioritization of transmitted practice (Sunnah) versus regional precedent. This exchange exemplifies the depth and rigor of classical Islamic scholarship, highlighting how even seemingly minor quantitative differences could carry significant implications for the formulation of legal rulings and the standardization of

religious practice. It also underscores the high value placed on precision, accuracy, and fidelity to prophetic tradition within the Islamic legal tradition.

Metric Equivalents and Scholarly Interpretations: When contemporary analytical frameworks are applied to reinterpret and translate these classical units into modern metric equivalents, a spectrum of results emerges, reflecting both the diversity of historical data and the complexity of reconstruction methodologies. Scholars have employed a variety of approaches, including textual analysis, comparative historical study, and the examination of surviving physical artifacts, in order to approximate the volume of the Mud with greater accuracy. For instance, the scholar Walther Hinz, drawing upon calibration vessels from the Ayyubid period as a primary empirical reference, proposed that one Sa'—a unit consisting of four Mud measures—corresponds to approximately 4.21 liters. Based on this estimation, a single Mud would equate to roughly 1.05 liters.

However, while this calculation is methodologically robust and historically grounded, it does not represent the dominant or most widely accepted scholarly position. A broader consensus, particularly among the Shafi'i, Maliki, and Hanbali schools of Islamic jurisprudence, supports a more conservative and modest estimation of the Mud's volume. This majority perspective has been further substantiated by contemporary empirical research conducted at the Islamic University of Medina, where scholars have attempted to reconcile classical textual descriptions with measurable physical equivalents. According to this widely accepted view, one Mud is more accurately approximated as the equivalent of approximately 510 grams of medium-density grain. When this mass is converted into a liquid volume—taking into account the density and flow characteristics of water—it yields an estimated range of approximately 600 to 775 milliliters. This range accommodates minor variations while maintaining overall consistency with the prophetic model.

Archaeological Evidence and Physical Artifacts: In addition to textual and analytical approaches, the study of the Prophetic Mud is significantly enriched by the availability of archaeological evidence and preserved material culture. Among the most valuable of these are copper vessels dating back to the Merinid period in the 14th century. These vessels were deliberately crafted and designated as representations of the "Sa' of the Prophet," indicating a conscious effort within historical Muslim societies to preserve and materialize prophetic standards in tangible form. The existence of such artifacts provides an important bridge between theoretical scholarship and lived historical practice, offering concrete data that can be directly measured and analyzed.

Detailed examination of these Merinid-era vessels has revealed that they possess a total capacity of approximately 2.75 liters for one Sa'. When this volume is divided into its constituent units, it yields a precise value of approximately 687.5 milliliters for a single Mud. This measurement falls comfortably within the broader range proposed by the majority of scholars, thereby reinforcing the validity of the more moderate estimations. Moreover, these artifacts serve as a powerful reminder that historical Muslim communities were not only concerned with preserving textual knowledge but also invested in the physical replication and transmission of prophetic practices through carefully crafted objects.

Despite the presence of regional differences, methodological variations, and historical discrepancies in measurement, the essential meaning, purpose, and guiding principle of the Sunnah remain remarkably clear, coherent, and consistent across time and space. The Prophet Muhammad (peace be upon him) is consistently described in authentic narrations as performing Wudu in a manner that was both spiritually complete and physically sufficient while using a notably small quantity of water—significantly less than one liter. This practice was not incidental but intentional, reflecting a broader ethic of moderation, mindfulness, and resource consciousness that permeates Islamic teachings.

In this light, the Prophetic Mud should not be understood merely as a fixed numerical quantity or a rigid standard of measurement. Rather, it represents a holistic paradigm that integrates physical sufficiency, spiritual intentionality, and ecological awareness. It serves as a timeless model for sustainable practice, reminding practitioners that the value of an act of worship lies not in excess or extravagance but in the sincerity, discipline, and consciousness with which it is performed. In an age characterized by increasing environmental challenges and resource scarcity, this prophetic model offers a deeply relevant and instructive framework, encouraging a return to simplicity, balance, and responsible stewardship of natural resources.

3.2 Empirical Critique: Modern Extravagance in Mosques

When contemporary practices are carefully examined and critically assessed through the analytical lens of these well-established historical benchmarks, it becomes increasingly evident that there exists a significant, measurable, and deeply concerning deviation from the traditional one-Mud standard that was exemplified and practiced during the Prophetic era. Empirical data collected from a range of modern religious facilities, particularly within the context of mosques in Indonesia, provides a compelling and somewhat alarming picture of how far current practices have shifted away from this foundational model of moderation.

Specifically, recent field studies and observational measurements indicate that the average volume of water utilized for a single act of Wudu has risen substantially to approximately 2.47 liters per individual. This figure represents nearly four times the estimated Prophetic average, thereby illustrating not only a gradual drift but a pronounced and systemic escalation in water usage that cannot be overlooked.

This pattern of increased consumption is not merely an incidental byproduct of modernization or technological convenience; rather, it reflects a broader transformation in behavioral habits, infrastructural design, and user interaction with water systems in contemporary mosque environments. The transition from traditional, vessel-based methods of water use—where individuals exercised direct control and mindfulness over each handful of water—to modern tap-based systems has inadvertently facilitated a culture of excess. The continuous flow of water, combined with a lack of awareness or intentional restraint, has contributed to a normalization of overuse, where efficiency is no longer actively considered during the performance of ritual purification.

Moreover, a deeper analysis of the collected data reveals the presence of a particularly concerning subgroup of users who may be categorized as "extravagant" in their water consumption behavior. This subset of individuals consistently demonstrates usage patterns that far exceed even the already elevated average, with recorded volumes frequently reaching between 7 to 9 liters per person for a single instance of Wudu. Such levels of consumption are not only disproportionate but also indicative of a significant disconnect between contemporary practice and the ethical principles embedded within the Sunnah. In this context, the issue extends beyond mere inefficiency or technical waste; it represents a fundamental departure from the values of moderation (wasatiyyah), restraint, and environmental consciousness that are integral to Islamic teachings on cleanliness and worship.

The implications of this trend are both practical and ethical. On a practical level, the excessive use of water places unnecessary strain on local water resources, increases operational costs for mosque management, and contributes to broader environmental challenges, particularly in regions already facing water scarcity or distribution inefficiencies. On a deeper ethical and spiritual level, however, this pattern of extravagance undermines the very essence of ritual purification as taught and demonstrated by the Prophet Muhammad (peace be upon him), where simplicity, sufficiency, and intentionality were paramount.

Therefore, the data not only highlights a problem but also underscores an urgent and pressing need for comprehensive reform. Such reform must operate on multiple levels, including the redesign of water infrastructure within mosques to promote efficiency, the implementation of educational initiatives aimed at raising awareness among worshippers, and the cultivation of a renewed sense of mindfulness in the performance of Wudu. Addressing this issue requires both systemic intervention and individual behavioral change, ensuring that modern practices can be realigned with the enduring principles of the Prophetic model while also responding responsibly to contemporary environmental realities.

Location/Study	Average Volume (Liters/person)	Prophetic Benchmark
Urban Mosque (Indonesia)	2.47 L [2]	0.6 - 0.77 L
Ulul Albaab Mosque (Bandung)	3.9 L	0.6 - 0.77 L
Mosque in Oman	Up to 7.0 L [9]	0.6 - 0.77 L
IIUM Mosque (Malaysia)	7.0 L	0.6 - 0.77 L

A critical examination of the data reveals that the primary driver of this excessive waste is rooted in behavioral patterns rather than purely technical failures. Observation of ritual practices shows that approximately 60% of congregants maintain a continuous flow of water, failing to close the tap during the intermediate stages of the ablution process, such as when they are actively rubbing or massaging their limbs. This indicates a significant lapse in mindfulness during the transition between the various steps of the ritual.

Furthermore, this behavior is exacerbated by a "psychological detachment" facilitated by modern infrastructure. The illusion of an infinite, inexhaustible stream provided by high-pressure, modern faucets effectively serves to remove the visual and tactile feedback loop that was naturally inherent in traditional vessel-based purification. Unlike a bowl or a basin, which provides a clear, diminishing inventory of the water remaining, the modern tap conceals the true volume of consumption, thereby dismantling the cognitive boundaries that once encouraged conservation and spiritual intentionality.

3.3 Socio-Technical and Cultural Factors

The prevailing inefficiency in water usage is further compounded by complex cultural and psychological dimensions that influence how rituals are performed. Utilizing Hofstede's Cultural Dimensions Theory, research suggests that a high degree of "uncertainty avoidance" within certain Muslim communities significantly impacts ablution habits. This psychological trait manifests as a compulsive need to over-saturate the limbs to guarantee "spiritual purity." Driven by a profound theological anxiety that a smaller, more traditional volume of water might fail to fully "reach the skin" and thus invalidate the entire prayer, users default to excess as a form of ritual insurance.

Furthermore, the economic structure of water provision in religious spaces plays a pivotal role. Because the vast majority of mosques offer water as a free, unmetered public good, the environment is ripe for a "tragedy of the commons." In this scenario, the absence of a direct cost or a personal feedback mechanism leads to a diminished sense of individual accountability, where the collective resource is depleted without regard for its long-term sustainability or its spiritual sanctity.

3.4 Engineering the "Green Mosque"

To effectively bridge the chasm between modern convenience and Prophetic conservation, mosques must proactively adopt technical solutions and engineering interventions that facilitate, rather than hinder, Sunnah-compliant efficiency:

Water-Efficient Aerators (WEAs): One of the most cost-effective interventions involves retrofitting existing faucets with WEAs (costing approximately **$6–12 USD**). These devices can dramatically reduce flow rates from a standard **2.2 GPM (Gallons Per Minute) to 1.0 GPM** without sacrificing the user's perception of water pressure. On a broader scale, this simple adjustment can save approximately **10,847 gallons** per household or institutional unit annually.

The Transparent Tank Concept: This architectural intervention involves integrating a small, **visual reservoir** at each Wudu station. By allowing users to see the water level physically drop as they use it, the system restores the **"vessel logic"** and immediate feedback inherent in the Prophetic era, psychologically nudging the worshipper toward greater mindfulness.

Greywater Recovery and Circularity: Ablution water is technically classified as **"greywater"** due to its low organic load, making it an ideal candidate for reuse in toilet flushing or landscape irrigation. Empirical studies have demonstrated that integrating **rainwater harvesting (PAH)** and greywater systems can, in some instances, meet the **entire**

clean water demand for a campus or community mosque, creating a closed-loop sustainable system.

3.5 Comparative Jurisprudence on Israf (Extravagance)

While all four primary schools of thought (Madhahib) agree that the absolute priority of Wudu is ensuring the water physically wets the skin, they maintain varying legal degrees regarding the prohibition of excess volume. The Maliki and Hanbali schools represent the most stringent positions, often classifying the excessive use of water as Haram (prohibited) rather than merely Makruh (disliked), particularly when the community faces environmental scarcity.

When measured against these classical legal frameworks, modern consumption rates—which range from 2.4 to 7 liters per Wudu—represent a staggering departure from traditional norms. Such volumes far exceed the threshold of flexibility allowed by any recognized school of jurisprudence. This effectively places many modern worshippers in a paradoxical state of perpetual Israf (wastefulness) at the very moment they are attempting to perform a sacred act of purification.

4. Conclusion

The Prophetic one-Mud standard stands as a profound and perfect synthesis of spiritual purity and ecological stewardship, offering a timeless blueprint for sustainable living. It serves as a reminder that the depth of one's worship is not measured by the volume of water consumed, but by the mindfulness and intentionality of the act. However, the architecture of modern mosque systems has inadvertently institutionalized waste. By replacing the deliberate, mindful nature of vessel-based usage with the mechanical convenience of mindless, continuous-flow taps, the current infrastructure has severed the connection between the worshipper and the preciousness of the resource.

This study ultimately concludes that while technical upgrades are vital, technology alone is an insufficient remedy for a crisis that is deeply rooted in habit and perception. To truly bridge the gap, there must be a profound behavioral shift grounded in the concept of "Ecological Tauhid"—the recognition of the oneness of God and the interconnectedness of His creation—and the practical implementation of the "Mud Challenge." Such initiatives are necessary to recalibrate the collective consciousness of the community, challenging the modern definition of "necessity" and returning to a more disciplined, Sunnah-aligned practice.

By adopting simple yet high-impact technical solutions like Water-Efficient Aerators (WEAs) and fostering the habit of turning off the tap during the intermediate steps of ablution, the global Ummah possesses the potential to achieve a staggering 76% reduction in water consumption. In doing so, the Muslim community can transcend ritualistic habit and truly fulfill their divine mandate as Khalifah (stewards) of the Earth, protecting the planet's finite resources for generations to come.

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