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Nurturing the Earth through Islamic Ethical Practices and Community-Based Permaculture in Indonesia

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Abstract

The global environmental crisis, marked by climate change, deforestation, and ecosystem degradation, has brought widespread social impacts, including economic inequality, health crises, and food insecurity. In Indonesia, environmental pressures have intensified due to unsustainable agricultural practices, rapid urbanization, and extractive industries, necessitating new development models that prioritize environmental regeneration and social resilience. This study aims to explore how Islamic ecological principles are operationalized through permaculture practices at the Bumi Langit Institute and Kedai Teh Umran in Yogyakarta. This research employed a qualitative method with an interpretive approach. Data were collected through semi-structured interviews, participant observation, and document analysis conducted at both research sites. The data were then analyzed using thematic analysis techniques based on Groat and Wang's six-phase framework. The findings reveal that the principles of *khilafah* (stewardship), *barakah* (blessing), and *mizan* (balance) have been effectively embodied in agroforestry systems, waste-to-resource cycles, and community development initiatives grounded in Islamic ethics. The study implies that faith-based and community actors play a vital role in addressing contemporary ecological crises and highlights the need for stronger partnerships between religious institutions, academic bodies, and environmental practitioners to advance spiritually grounded innovations in the Anthropocene era.

Keywords: Islamic Environmental Ethics; Permaculture Innovation; Socio-Ecological Transformation; Communities

Krisis lingkungan global yang ditandai oleh perubahan iklim, deforestasi, dan degradasi ekosistem telah membawa dampak sosial yang luas, termasuk ketidaksetaraan ekonomi, krisis kesehatan, dan kerawanan pangan. Di Indonesia, tekanan lingkungan semakin meningkat akibat praktik pertanian tidak berkelanjutan, urbanisasi cepat, dan industri ekstraktif, sehingga diperlukan model pembangunan baru yang berfokus pada regenerasi lingkungan dan ketahanan sosial. Penelitian ini bertujuan untuk mengeksplorasi bagaimana prinsip-prinsip ekologi Islam dioperasionalkan melalui praktik permakultur di Bumi Langit Institute dan Kedai Teh Umran di Yogyakarta. Penelitian ini menggunakan metode kualitatif dengan pendekatan interpretatif. Data dikumpulkan melalui wawancara semi-terstruktur, observasi partisipatif, dan analisis dokumen di Bumi Langit Institute dan Kedai Teh Umran. Analisis data dilakukan dengan teknik analisis tematik berdasarkan kerangka enam fase Groat dan Wang. Temuan penelitian menunjukkan bahwa prinsip *khilafah*, keberkahan (*barakah*), dan keseimbangan (*mizan*) telah berhasil diwujudkan dalam sistem agroforestri, siklus limbah, dan pengembangan komunitas berbasis etika Islam. Implikasi penelitian ini menegaskan bahwa aktor berbasis agama dan komunitas memiliki peran vital dalam mengatasi krisis ekologi kontemporer, serta mendorong perlunya kemitraan antara lembaga keagamaan, akademisi, dan praktisi lingkungan untuk memperkuat inovasi berbasis nilai spiritual di era Antroposen.

A. INTRODUCTION

In recent decades, environmental degradation has escalated into a critical global issue, with widespread implications for ecological systems and human society. Climate change, deforestation, soil depletion, and water pollution have led to cascading social consequences, including health crises, economic inequality, displacement, and food insecurity. Indonesia faces increasing environmental stress at national level due to unsustainable agricultural practices, rapid urbanization, and extractive industries that degrade biodiversity and ecosystem services. These interlinked crises demand a paradigmatic shift toward sustainable models of development that prioritize environmental regeneration and social resilience (Foltz et al. 2003; Al-Jayyousi 2012; Islamil et al. 2019).

In response to these challenges, permaculture has gained attention as a regenerative system of agricultural design that mimics natural ecosystems. Introduced by Bill Mollison and David Holmgren in the 1970s, permaculture integrates ecological principles into human land-use practices to create sustainable food systems and resilient communities (Habib and Fadaee 2022). It is grounded in three core ethics—Earth Care, People Care, and Fair Share—that resonate strongly with religious ecological teachings, including those found in Islam (Alhabsyi 2017; Rakhmat 2022). These principles emphasize environmental stewardship (*khilafah*), social justice (*adl*), and moderation (*wasatiyyah*), highlighting a shared moral commitment to the protection of life and the equitable use of natural resources (Karim et al. 2022; Abdullah et al. 2021). As such, permaculture offers a technical solution to ecological crises and a platform for translating spiritual and ethical values into sustainable environmental practice.

Recent scholarship has increasingly acknowledged the potential of faith-based approaches as effective frameworks for promoting

environmental sustainability. Islam, in particular, provides a robust ecological ethic grounded in spiritual values and stewardship, conceptualized through the notion of *Caliph fil ardh* (vicegerent on Earth) (Al-Jayyousi 2012; Rakhmat 2022). Central to Islamic ecological thinking is the idea that humans bear responsibility not merely as resource users but as trustees who must maintain environmental balance and sustainability (Sayyidi 2016; Abdullah et al. 2021). Permaculture, with its holistic focus on ecosystem-based design, aligns closely with these principles, particularly through its foundational ethics – Earth Care, People Care, and Fair Share – which parallel Islamic teachings on stewardship (*khilafah*), social welfare (*maslahah*), and justice (*adl*) (Alhabsyi 2017; Habib and Fadaee 2022). Case studies such as Bumi Langit Institute and Kedai Teh Umran in Yogyakarta illustrate practical applications of permaculture informed explicitly by Islamic ecological values. These institutions have successfully integrated spiritual beliefs with tangible ecological actions, creating sustainable practices that resonate culturally and environmentally within their local contexts and beyond (Karim et al. 2022; Italiana and Hafsaari 2023).

Nevertheless, a notable research gap remains concerning the detailed understanding of how Islamic ecological ethics concretely translate into permaculture practices within Muslim communities, especially in contexts shaped by modernization challenges such as those in Indonesia. Existing studies have broadly discussed Islamic environmental principles but rarely examine their practical operationalization through sustainable agricultural models like permaculture. Consequently, there is a compelling need for empirical research focused on the mechanisms through which religious values are embedded into ecological actions at the community level.

This research gap necessitates a focused investigation of specific contexts, such as Bumi Langit Institute and Kedai Teh Umran, to understand how Islamic teachings inform environmental practices

effectively. Addressing this gap can provide valuable insights into the integration of spiritual motivations and practical sustainability methods, contributing substantially to both theoretical discourse and applied strategies for ecological resilience in Muslim-majority regions (Islamil et al. 2019; TR Luik et al. 2021; Yakob and Abd. Azid 2022).

B. METHODOLOGY

This study employed a qualitative interpretive approach to explore permaculture practices at Bumi Langit Institute and Kedai Teh Umran in Yogyakarta, Indonesia. The research was grounded in an interpretive paradigm, which acknowledges the subjective nature of social and ecological experiences and seeks to understand how spiritual and ecological beliefs are constructed and enacted in specific cultural contexts (Creswell and Poth, 2018). This approach was particularly appropriate for examining the integration of Islamic principles with permaculture practices, as it allowed for deep exploration of meaning-making processes within these communities.

The selection of Bumi Langit Institute and Kedai Teh Umran as research sites was purposive and based on several critical criteria:

- Demonstrated commitment to integrating Islamic principles with permaculture practices
- Established a track record of community engagement in sustainable development
- Geographical proximity enabling comparative analysis
- Accessibility and willingness of community members to participate in research

These sites represented contrasting organizational models – Bumi Langit as an institutional model and Kedai Teh Umran as a community-

based initiative – allowing for meaningful comparison while maintaining the central focus on faith-based permaculture implementation.

Data collection consisted of three primary methods conducted between June and July 2024:

1. In-depth semi-structured interviews were conducted with key practitioners at both organizations and community members. Interview protocols focused on spiritual motivations for ecological practices, the implementation of permaculture principles, and challenges and opportunities in sustainable community development. Each interview lasted 60-90 minutes and was recorded with participant consent.
2. Participant observation was conducted over two weeks (one week at each site) to document daily permaculture practices, community interactions, decision-making processes, and resource management strategies. Field notes documented both observable practices and contextual factors.
3. Document analysis examined organizational materials including training manuals, community publications, social media content, and promotional materials to understand how each organization articulated its values and approaches.

The data analysis for this study will follow the six-phase thematic analysis framework proposed by Groat & Wang (2013), which is a systematic approach to identifying, analyzing, and reporting patterns (themes) within qualitative data. This framework is particularly suited for interpretative research, as it allows for a flexible, yet rigorous exploration of how spiritual and ecological values are constructed and enacted in specific cultural contexts. The six phases include:

1. Familiarization with Data: The first phase involves immersing oneself in the data to deeply understand its content. This includes

reading and re-reading interview transcripts, field notes, and other collected materials (e.g., organizational documents, social media content, and photographic documentation). During this phase, the researcher will identify initial ideas and patterns that emerge from the data.

2. **Generating Initial Codes:** In this phase, the researcher will systematically code the data by identifying meaningful text segments or other data forms related to the research questions. Codes are labels that capture the essence of the data segments and can be descriptive or interpretive. This process involves breaking down the data into smaller units and assigning codes that reflect the participants' perspectives, practices, and experiences related to permaculture and Islamic ecological principles.
3. **Searching for Themes:** Once initial codes are generated, the researcher will organize them into broader themes. Themes are patterns of meaning that recur across the dataset and are relevant to the research objectives. This phase involves clustering related codes together and identifying overarching themes that capture the essence of the data. For example, themes might include 'spiritual motivations for ecological practices', 'integration of Islamic principles in permaculture' or 'community engagement in sustainability'.
4. **Reviewing Themes:** In this phase, the researcher will refine and review the identified themes to ensure they accurately represent the data. This involves checking whether the themes are coherent, distinct, and supported by sufficient evidence from the dataset. The researcher may also revisit the coded data to ensure that all relevant segments have been included in the thematic framework. This iterative process helps to ensure the reliability and validity of the themes.

5. Defining and Naming Themes: Once the themes are finalized, the researcher will define and name them in a way that communicates their significance. This involves writing detailed descriptions of each theme, explaining how it relates to the research questions, and providing illustrative examples from the data. The naming of themes should reflect their core meaning and relevance to the study's focus on faith-based sustainability and permaculture practices.
6. Producing the Report: The final phase involves weaving the thematic analysis into a coherent narrative that addresses the research questions. The researcher will present the findings in a way that highlights the connections between the themes and the broader theoretical and practical implications of the study. This includes discussing how the themes relate integrating Islamic principles with permaculture practices, the challenges and opportunities faced by Bumi Langit Institute and Kedai Teh Umran, and the broader implications for faith-based sustainability initiatives.

By following Groat and Wang's (2013) thematic analysis framework, this study aims to produce a rigorous and insightful analysis of how Islamic principles and permaculture practices are integrated at Bumi Langit Institute and Kedai Teh Umran. The findings will contribute to academic discourse and practical initiatives promoting faith-based sustainability in Muslim communities.

Theoretical Framework

Environmental sociology provides the macro-level lens for situating faith-based permaculture within broader patterns of ecological degradation and socio-economic change. The *treadmill-of-production* thesis highlights how export-oriented agriculture, fossil-fuel dependence, and land commodification generate ecological crises in Indonesia (Schnaiberg 1980;

Gould, Pellow, and Schnaiberg 2008). In contrast, *ecological modernization* theory points to niches of innovation – such as agro-ecological design – that can decouple growth from environmental harm when supported by reflexive institutions (Mol and Spaargaren 2012). Political ecology sharpens this structural view by tracing how power, knowledge, and uneven development shape access to land and the meanings attached to ‘sustainability’ (Robbins 2012). These perspectives frame permaculture initiatives like Bumi Langit and Kedai Teh Umran as counter-movements that contest the treadmill while selectively harnessing modernization processes.

To explain how religious meanings are translated into everyday ecological practice, the study adopts Bourdieu’s theory of practice – focusing on *habitus*, diverse forms of capital, and the field of faith-based environmental action (Bourdieu 1977, 1990). Islamic ecological teachings supply a distinctive moral and symbolic capital that orients practitioners toward *Earth Care*, *People Care*, and *Fair Share*, while the field’s rules of legitimation reward visible piety and ecological competence. Social practice theory further disaggregates permaculture into the recursive bundling of materials, competencies, and meanings (Shove, Pantzar, and Watson 2012), clarifying how spiritual narratives become routinized soil-building, water-harvesting, and seed-saving. Finally, frame-alignment theory shows how movement entrepreneurs articulate Qur’anic stewardship with global sustainability discourses to recruit participants and resources (Snow and Benford 1988). This multi-level framework – structural, practical, and discursive – allows the research to trace precisely how Islamic ecological principles are operationalized through permaculture in the Indonesian context and to assess their potential for scaling within Muslim-majority societies.

C. RESULT AND DISCUSSION

This section presents findings from data analysis collected at Bumi Langit Institute and Kedai Teh Umran, examining how Islamic principles inform and shape permaculture practices at both sites. The analysis reveals distinct but complementary approaches to implementing '*Caliph fil ardh*' concept through permaculture principles and practices. The findings are organized thematically rather than by site, highlighting key dimensions of faith-based permaculture implementation while contrasting approaches between the two organizations.

1. *Values Reflected in Practice at Bumi Langit Institute: A Philosophy of Harmony*

Bumi Langit Institute represents a living laboratory where the harmonious relationship between humans and nature manifests through intentional design and daily practices. As expressed by founder Iskandar Waworuntu:

"What I'm doing here is trying to practice the concept of *khalifah* (caliphate) on earth. Being a caretaker, not just a user. Creating balance, not just taking."

This space serves as a demonstration site for restoring human awareness of the Caliphate concept—the Islamic principle positioning humans as stewards responsible for earth's wellbeing. The institute deliberately integrates ancestral knowledge with contemporary permaculture practices to embody the Islamic principle of '*rahmatan lil 'alamin*' (mercy for all creation) through its core philosophy: 'Care for Earth, Care for Humanity, and Share for All'.

Located in the hilly region of Imogiri, Yogyakarta, on approximately 3 hectares of previously arid land, Bumi Langit has transformed challenging terrain into a thriving food forest through

sustainable agricultural methods. The institute implements polyculture and intercropping systems, where various plant species grow together to create a balanced and productive ecosystem. Flowering plants are strategically placed alongside food crops to attract predatory insects that naturally control pests, thus reducing or eliminating the need for pesticides. Additionally, nitrogen-fixing plants improve soil fertility naturally, replacing chemical fertilizers with organic compost derived from animal manure and organic waste. The institute's transformation of this land illustrates a practical application of the Caliphate principle—converting degraded land into a productive ecosystem that supports biodiversity while meeting human needs. This restoration work directly reflects the Islamic teaching that humans should leave a place better than they found it, demonstrating environmental stewardship through regenerative practices rather than merely extractive ones.

The institute's approach to land management is guided by specific spiritual values that inform their practices. Waworuntu emphasizes that humans have historically taken from nature without reciprocating, and through sustainable practices, Bumi Langit seeks to restore ecological balance. The concept of "*barakah*" (divine blessing) influences their zero-waste philosophy, where all elements within the system serve multiple purposes. This spiritual principle manifests in their comprehensive waste management system, where waste from one process becomes input for another:

1. Biogas digester system: Animal and human waste undergo anaerobic digestion, producing methane fueling cooking and lighting throughout the institute. The resulting organic residue becomes high-quality fertilizer for agricultural use. This integrated system reduces dependence on fossil fuels and exemplifies the Islamic principle of "*taharah*" (purification) by transforming what is considered unclean into something beneficial and valuable.

2. Water management: Wastewater from kitchens and bathrooms passes through sophisticated natural filtration systems using sand, rocks, and aquatic plants. Water hyacinth serves as bio-indicators of water quality, while the filtered water collects in ponds that support diverse fish species and aquatic plants. This water then supports fish farming before irrigating agricultural land, demonstrating the Islamic principle of "*israf*" (avoiding waste) by using each drop of water multiple times through an integrated living ecosystem.
3. Ethical animal husbandry: Strategically placing rabbits, chickens, ducks, geese, goats, and cows creates a complementary system where each species contributes to the overall ecosystem health. Unlike industrial farming operations, animals at Bumi Langit are raised in environments that allow them to live naturally and healthily. Chickens roam freely and live longer lives than their industrially-raised counterparts, while also contributing to the composting process by breaking down food waste. This arrangement reflects the Islamic understanding of '*mizan*' (balance) in creation and demonstrates respect for animal welfare as an ethical imperative.

The institute's application of permaculture principles is not merely technical but deeply rooted in spiritual understanding. For example, the arrangement of plants in guilds—where different species support each other—mirrors the Islamic concept of *ta'awun* (mutual assistance). Plants like bamboo serve as windbreaks protecting more vulnerable species, demonstrating the principle of protecting the weak, a core value in Islamic ethics.

Bumi Langit's educational programs integrate spiritual teachings with practical skills. Their workshops and courses explicitly connect permaculture ethics (earth care, people care, fair share) with Islamic principles. For instance, participants learn about water conservation

techniques alongside teachings about water's sacred nature in Islam. This approach helps visitors understand sustainability as an environmental practice and a spiritual obligation.

The institute's Warung Bumi exemplifies its holistic approach to food systems. Beyond serving organic food, it illustrates the Islamic principle of *halalan tayyiban*—food that is not only permissible but wholesome and beneficial. The café's practices of sourcing locally, minimizing processing, and avoiding artificial additives put into practice the Islamic teaching that the body is an *amanah* (trust) from God that must be appropriately maintained.

The weekly organic market facilitates direct producer-consumer relationships, implementing the Islamic economic principle of reducing intermediaries that might exploit farmers or consumers. This market structure creates a more equitable food system that honours the dignity of farmers' work while providing consumers with wholesome food—a practical application of the Islamic concept of *'adl* (justice) in economic transactions.

Through Bumi Langit Coop, the institute extends its integrated approach to community development. This cooperative structure embodies the Islamic *ummah* (community) principle by developing entrepreneurship skills among community members, particularly women and youth. By involving local farmers in decision-making processes and ensuring fair distribution of benefits, the coop demonstrates how spiritual values can shape economic structures to be more inclusive and equitable.

The institute's architectural choices and energy systems reflect their spiritual and ecological values. Buildings utilize natural, locally-sourced materials and incorporate passive cooling techniques, demonstrating respect for local wisdom and minimizing environmental impact. Regarding energy, Bumi Langit strives to transition entirely to renewable sources, relying on solar power and biogas to meet their electricity needs. Installed

solar panels reduce dependence on fossil fuels, while the biogas system optimizes the use of organic waste. These design choices exemplify the Islamic principle of *khilafah* (stewardship) by creating human habitats that work in harmony with natural systems rather than against them.

Bumi Langit's impact extends beyond its physical boundaries through its educational programs and community initiatives. Through the Bumi Langit Institute, they conduct various training sessions and workshops on permaculture, natural resource management, and sustainable lifestyles. These programs are open to anyone interested in learning, including local farmers, academics, and individuals who want to apply permaculture principles daily. The community known as "Sahabat Bumi Langit" (Friends of Bumi Langit) actively participates in spreading sustainability values. They come from diverse backgrounds—farmers, traders, students, and professionals—who share a common vision of maintaining ecological balance.

The institute bridges traditional Islamic values and contemporary sustainability practices by hosting visitors from diverse backgrounds, including schools, universities, and international organizations. Their approach to knowledge-sharing reflects the Islamic tradition of '*ilm nafi*' (beneficial knowledge) by emphasizing practical skills that participants can apply within their communities.

The institute's work represents a living example of how spiritual values can inform practical solutions to environmental and social challenges. Through its various initiatives, Bumi Langit demonstrates that living in harmony with nature is not merely idealism but achievable through practical implementation. Their permaculture practices prove that healthy ecosystems can benefit humans and the environment long-term.

"What I'm doing here is trying to practice the concept of khalifah on earth. Being a caretaker, not just a user. Creating balance, not just taking." (Iskandar Waworuntu, personal interview 2024)

With this spirit, Bumi Langit continues to move forward, creating a space for humans to return to living harmoniously with nature, as it should be. By integrating Islamic principles with permaculture ethics and practices, Bumi Langit demonstrates that sustainability is not just about technical solutions but about recovering a harmonious relationship between humans and the natural world – a relationship central to the Islamic understanding of human purpose on Earth.

2. Values Reflected in Practice at Kedai Teh Umran: Community-Based Permaculture

Both organizations demonstrate deliberate integration of Islamic principles with permaculture ethics, though with different emphases and implementation strategies. Interview and observational data reveal three primary mechanisms of integration: explicit doctrinal connections, embodied practices, and community education.

At Bumi Langit Institute, founder Iskandar Waworuntu articulates a clear theological foundation for their work.

"Being a caretaker, not just a user. Creating balance, not just taking." (Iskandar Waworuntu, personal interview, 2024)

This statement reflects a conscious application of the Islamic principle, positioning humans as stewards responsible for the earth's well-being. Document analysis of Bumi Langit's training materials reveals systematic connections between Islamic concepts and permaculture principles, with explicit references to Quranic verses and hadith (Prophetic traditions) that support ecological stewardship.

In contrast, at Kedai Teh Umran, doctrinal connections emerge more organically through community dialogue. As one community member noted:

"We don't always use Islamic terminology, but the values guide our decisions. For example, when discussing whether to use chemical fertilizers, someone might reference the concept of not causing harm as a reason to choose organic methods."

This observation suggests that Islamic principles operate as an implicit ethical framework that shapes decision-making processes rather than being explicitly codified in organizational documents.

Table 1.

Comparison between Bumi Langit Institute and Kedai Teh Umran

Dimension	Bumi Langit Institute	Kedai Teh Umran
Scale of Implementation	Institutional demonstration on -3 ha, integrating permaculture into all site operations	Grassroots cooperative model in Ngebo village, leveraging small plots and local markets
Stewardship Operationalization	Land restoration, waste-to-resource (biogas, compost), closed-loop water systems	Market waste repurposing, kitchen gardens, community drying house
Spiritual Capital	High symbolic capital via workshops, courses, and	Strong social capital through learning

Dimension	Bumi Langit Institute	Kedai Teh Umran
	spiritual framing of permaculture ethics	circles (<i>halaqah</i>) and cooperative networks
Structural Position	Counters export-oriented agriculture and land commodification (treadmill-of-production)	Leverages local assets to resist external development pressures (political ecology)
Reflexivity	Reflexive redesign of systems to decouple ecological harm from human well-being (ecological modernization)	Adaptive modernization through community-led innovation and participatory governance
Power & Knowledge	Centralized knowledge production blending ancestral and scientific insights	Participatory co-production of ecological knowledge, valuing indigenous and market-based expertise
Practice Bundles	Materials: biogas plant, water filters, multi-species guilds Competences: design, composting, animal husbandry Meanings: mercy	Materials: recycled market waste, garden beds, community drying house Competences: collaboration, seed saving, processing Meanings: trust

Dimension	Bumi Langit Institute	Kedai Teh Umran
	(<i>rahmatan</i>), blessing (<i>barakah</i>)	(<i>amanah</i>), revival (<i>ihya</i>)
Discursive Framing	Frames <i>Caliph fil ardh</i> alongside global sustainability narratives to recruit and legitimize participants	Aligns Islamic stewardship with ethical marketplace (<i>suq</i>) and social solidarity (<i>takaful ijtima'i</i>)

Applying the treadmill-of-production thesis reveals that both initiatives are counter-movements to the pervasive logic of extractive agriculture and land commodification that drive ecological degradation (Schnaiberg 1980; Gould, Pellow, and Schnaiberg 2008). Bumi Langit Institute transforms arid terrain into a biodiverse food forest, directly challenging the continuous intensification and simplified monocultures characteristic of the treadmill, while Kedai Teh Umran repurposes market waste as raw material, subverting the prevailing cycle of consumption and disposal. In both cases, these interventions demonstrate that permaculture—informed by Islamic stewardship ethics—can decouple production from environmental harm, showcasing viable alternatives to fossil-fuel-dependent agribusiness models.

Under ecological modernization theory, innovation niches emerge where reflexive institutions reconfigure socio-technical systems to reconcile growth with sustainability (Mol and Spaargaren 1992). Bumi Langit exemplifies such reflexivity by redesigning its energy, water, and land-use systems to prioritize regenerative practices over extractive efficiencies, embodying a transition toward low-impact livelihoods. Kedai Teh Umran demonstrates adaptive modernization: it re-tools existing community infrastructures (markets, village assets) to integrate permaculture

techniques, fostering incremental shifts in local governance and resource management without waiting on top-down policy reforms.

Political ecology sharpens this analysis by revealing how power, knowledge, and uneven development influence both site trajectories (Robbins 2012). Bumi Langit's ancestral-scientific knowledge hybrid consolidates centralized expertise, enabling large-scale demonstrations yet potentially marginalizing less formal knowledge holders. In contrast, Kedai Teh Umran's participatory model valorizes village-level expertise, distributing agency and challenging external development agendas. This dynamic underscores that sustainable outcomes depend on ecological design and equitable control over land, resources, and epistemic authority.

At the micro-level of practice, Bourdieu's framework elucidates how Islamic ecological teachings serve as moral and symbolic capital within faith-based environmental action (Bourdieu 1977, 1990). At Bumi Langit, the founder's spiritual authority and institutional branding translate into high symbolic capital, attracting participants and funding. This spiritual capital reinforces a habitus oriented toward stewardship and regenerative ethics. At Kedai Teh Umran, social capital—built through cooperative networks and learning circles—mobilizes community members by aligning religious dispositions with collective practice, illustrating how diverse forms of capital shape engagement in permaculture fields.

Social practice theory further disaggregates permaculture into bundles of materials, competences, and meanings (Shove, Pantzar, and Watson 2012). Bumi Langit's tightly integrated systems (biogas digesters, aquaponic water filters, polyculture guilds) reflect complex material-competence assemblages, where participants acquire specialized skills (e.g., anaerobic digestion management) and internalize meanings of '*barakah*' and '*mizan*.' Kedai Teh Umran's simpler yet potent practice bundles—garden beds made from market waste, communal drying houses, seed-saving protocols—underscore that innovative material configurations

and collaborative competences can yield robust ecological outcomes even at smaller scales.

Frame alignment theory explains how these initiatives recruit and mobilize supporters by bridging Islamic stewardship with broader sustainability discourses (Snow and Benford 1988). Bumi Langit's workshops and global outreach frame *Caliph fil ardhah* as congruent with international environmental agendas, facilitating alliances with NGOs and academic institutions. Kedai Teh Umran's narrative embeds permaculture within the moral economy of the *suq*, resonating with local sensibilities about fair trade and mutual responsibility. Both frames align individual worldviews with organizational goals, enhancing resonance and commitment.

Taken together, this multi-level framework—structural (treadmill-of-production, ecological modernization, political ecology), practical (social practice bundles), and discursive (frame alignment)—provides a robust lens to understand how Islamic ecological principles are operationalized through permaculture in Indonesia. It reveals that translating spiritual values into sustainable practice depends on dynamic interactions among macro structures, organizational fields, embodied competencies, and collective narratives.

Moreover, the comparative analysis illuminates critical tensions around scale and inclusivity. Bumi Langit's institutional scale affords high visibility and resource mobilization but risks centralizing power and replicability challenges. Kedai Teh Umran's grassroots model excels in local empowerment yet may struggle to influence broader policy or embed systemic changes. Addressing these trade-offs requires intentional reflexive governance that navigates the middle path (*wasatiyyah*) between depth and breadth, ensuring that scaling efforts preserve core ethical commitments while adapting to diverse contexts (Mol and Spaargaren 1992; Bourdieu 1990; Snow and Benford 1988).

The findings demonstrate that faith-based permaculture initiatives can serve as practical laboratories for ecological modernization and resistance to treadmill-driven degradation, mediated through distinct forms of symbolic and social capital. These models mobilize moral imperatives to foster resilient socio-ecological systems by framing environmental stewardship as a religious obligation. Future research should examine how these dynamics evolve, particularly the institutionalization and network expansion processes that shape long-term sustainability trajectories in Muslim-majority regions.

3. Integration of Spiritual Values with Ecological Practices

Survey results reveal that the digital public sphere, as theorized by Manuel Castells, has become a critical arena for shaping political dialogue and mobilizing youth political engagement in Indonesia and Pakistan. Castells' concept of the networked public sphere illustrates how social media decentralizes communication, enabling horizontal interactions, mass mobilization, and broader political participation. In Indonesia, youth use platforms such as Facebook and Twitter across a range of engagement levels from casual users to those participating in petitions, candidate profiling, and political commentary. In Pakistan, the data show more consistently high levels of political discussion, suggesting that social media plays a more central role in shaping public discourse, particularly during moments of political conflict or protest. However, consistent with Castells' warnings, this digital openness also brings risks: disinformation, polarization, and ideological manipulation are recurring themes across both countries.

Asef Bayat's theory of post-Islamism complements this structural view by emphasizing how Muslim youth negotiate political expression in informal and personalized ways. According to Bayat, post-Islamist politics is less about formal ideological movements and more about how everyday individuals integrate Islamic values into their socio-political engagement.

In Indonesia, youth often use social media to share personal opinions or advocate for social issues without necessarily aligning with political parties or movements. This suggests a preference for decentralized, expressive modes of engagement—what Bayat would call 'everyday politics'. In contrast, Pakistani youth appear more willing to express explicit political alignment online, often supporting candidates or parties. However, even in this more ideologically engaged context, their expressions remain rooted in informal, digitally mediated interactions rather than formal institutional participation.

A comparison between the two countries highlights distinct patterns in how social media influences political ideologies and mobilization. In Pakistan, 86.67% of respondents reported that social media had influenced their political beliefs, compared to 60% in Indonesia. This suggests that digital content may resonate more deeply with Pakistani youth, perhaps because of fewer alternative avenues for civic expression. Castells' theory helps explain this dynamic, as the digital sphere fills the gap left by limited offline political engagement, becoming a primary site of ideological negotiation. Meanwhile, Indonesian youth, though digitally active, seem less ideologically swayed by online content. Their engagement appears more issue-driven and less polarized, though still vulnerable to disinformation and identity-based tensions.

Both groups recognize the dual nature of social media in political life. Indonesian respondents often describe the digital sphere as empowering yet polarizing—an efficient tool for outreach that simultaneously reinforces echo chambers and identity-based divisions. Pakistani youth echo this ambivalence, citing hoaxes, political propaganda, and affective polarization as key drawbacks. These challenges align with Castells' caution about the fragmentation of discourse in digital spaces, and with Bayat's concern that informal political expressions can be co-opted or manipulated. Despite these risks, youth in both countries continue to use

social media as a platform for visibility, recognition, and justice. While Indonesian youth tend to express individual concerns within a pluralistic context, Pakistani youth often express political identity and grievance in more collective, ideologically aligned ways. Together, the frameworks of Castells and Bayat offer a nuanced lens for understanding how Muslim youth across different socio-political landscapes use digital media not only to participate in politics but to redefine it.

D. CONCLUSION

This study finds that Islamic ecological principles – particularly of *Caliph fil ardh* (stewardship concept) – have been effectively operationalized through permaculture practices at both Bumi Langit Institute and Kedai Teh Umran. At Bumi Langit, stewardship manifests through integrated systems such as agroforestry, waste-to-resource cycles, and design choices inspired by spiritual values like *barakah* (blessing) and *mizan* (balance). Meanwhile, Kedai Teh Umran implements a grassroots model that leverages local assets, transforms market waste into usable materials, and fosters cooperative learning structures rooted in Islamic ethics. These findings align with the research aims by showing how Islamic teachings guide ecological action, how spiritual values shape sustainable practices, and what implications such models hold for sustainable development in Muslim contexts.

From these findings, we can reflect on two key sociological insights. First, faith-based permaculture initiatives counter the dominant extractive logic of industrial agriculture. They demonstrate how communities can build regenerative systems that sustain ecosystems and livelihoods. Second, these initiatives mobilize symbolic and social capital to legitimize and sustain ecological action. Embracing Islamic values into everyday practices and organizational structures, they help transform environmental care into

a socially recognized, spiritually meaningful, and collectively enacted responsibility. This reflection deepens our understanding of how religion shapes individual behavior and collective fields of practice and environmental governance.

This research implies that religious and community-based actors are vital in addressing contemporary ecological crises. Policymakers should recognize and support these local innovations by fostering partnerships between religious institutions, academic bodies, and ecological practitioners. Educational institutions can help mainstream Islamic ecological ethics through formal and non-formal curricula. Future research could explore the long-term sustainability of these models, and their adaptability across different regions and cultural settings. By bridging faith and sustainability, this study highlights the strategic potential of religious ethics as a moral foundation for ecological innovation in the Anthropocene.

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