

Charismatic Resilience and Community Empowerment: Religious Authority, Ecological Practices, and Climate Adaptation in an Indonesian Pesantren

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Abstract

While Green Islam has attracted scholarly attention as a normative discourse, empirical research on how pesantren operationalize ecological resilience remains limited. This study examines the resilience processes of Pesantren Sirajul Huda and its surrounding community in Central Lombok in responding to climate-related challenges and post-pandemic socio-economic pressures. Employing an interpretive case study design and Kumpfer's (1999) resilience framework, the study explores how resilience is constructed through the interaction of religious authority, social capital, ecological practices, and community participation. The findings reveal that resilience within the pesantren is not merely a technical response to environmental challenges but a religiously grounded social process. Religious authority, trust-based social relations embedded in the notion of barakah, and institutional participation function as key protective factors that mobilize collective action. Through ecological education, organic farming, and vocational programs, environmental stewardship is translated into practical adaptation strategies that support supplementary subsistence, livelihood diversification, and community well-being. The study extends Kumpfer's framework by proposing the concept of charismatic resilience, defined as community resilience facilitated by the interaction of religious authority, trust-based social relationships, and institutional mechanisms of collective mobilization. These findings demonstrate how Islamic educational institutions can integrate religious values with climate adaptation practices to strengthen social well-being and adaptive capacity.

Keywords

climate change; pesantren ecology; community resilience; social well-being

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1. INTRODUCTION

In 2022, approximately 712 million people worldwide lived in extreme poverty, an increase of 23 million from 2019 (World Bank, n.d.). Absolute poverty continues to dominate global development challenges (Stiglitz, 2002). The continued prevalence of poverty worldwide has driven international efforts to develop a common vision for sustainable and equitable development. Responding to this challenge, the United Nations General Assembly emphasized fundamental values, including freedom, equality, solidarity, tolerance, respect for the environment, and shared responsibility, as guiding principles for global action (Hulme, 2009; UN Systems Task Team, 2015). These principles were



subsequently embedded within the Sustainable Development Goals (SDGs), adopted in 2015, with poverty eradication designated as the primary goal (Cuaresma et al., 2018). Nevertheless, contemporary research suggests that achieving this objective is increasingly complicated by climate change, which intensifies existing inequalities, deepens poverty, and threatens the livelihoods of vulnerable populations, particularly in developing countries. Climate-related disruptions affect food systems, public health, economic stability, and social cohesion, thereby undermining efforts to achieve sustainable well-being. Consequently, the challenge is no longer limited to poverty alleviation but extends to understanding how communities develop resilience in the face of environmental uncertainty.

Climate change has become one of the defining global challenges of the twenty-first century, attracting significant attention in international and regional policy arenas (Boer et al., 2020; Levin et al., 2021). The prominence of this issue was evident during the 2023 ASEAN Summit in Indonesia, which emphasized collaborative strategies to address climate-related risks and vulnerabilities. Indonesia's engagement in climate action is further reflected in its active participation in the United Nations Framework Convention on Climate Change (UNFCCC) and its ratification of the Paris Agreement (Tacconi & Muttaqin, 2019; Suroso et al., 2022). Growing evidence of climate-induced disasters worldwide underscores the urgency of coordinated responses to climate change and its cascading effects on human societies (BNPB, 2023; IPCC, 2022). According to the United Nations, climate change poses a profound threat to sustainable development by directly affecting health outcomes, exacerbating poverty, undermining food security, and increasing the risk of hunger and premature mortality (Watts et al., 2021; Wheeler & von Braun, 2013). In addition, climate change has been associated with population displacement, resource-related conflicts, and widening social inequalities (Abel et al., 2019; Ide et al., 2020). These impacts are often gendered, with women experiencing greater exposure to climate-related vulnerabilities due to existing structural inequalities (Abebe, 2014; UN Women, 2009; KemenPPPA, 2023; Djoudi et al., 2016). Consequently, contemporary debates increasingly emphasize the importance of building community resilience as a complementary strategy to climate mitigation, enabling societies to adapt to environmental change while maintaining social and economic well-being.

In addressing climate change, non-state actors play an important role alongside governments in promoting both mitigation and adaptation strategies (IESR, 2023; Bäckstrand et al., 2017). Within the Indonesian context, Islamic civil society organizations have emerged as significant actors in environmental advocacy. Nahdlatul Ulama (NU) and Muhammadiyah, as the country's largest Islamic organizations, have increasingly focused on environmental stewardship and climate change adaptation, highlighting the integration of religious values with sustainability concerns (Mangunjaya et al., 2015; Rosyidy, 2018). Islamic boarding schools (pesantren), as traditional Islamic educational institutions, hold a strategic role in producing future leaders, religious scholars (kyai and ulamas), and professionals across various sectors (Azra, 2020; Lukens-Bull, 2005). Official data from the Directorate of Diniyah Education and Islamic Boarding Schools of the Ministry of Religious Affairs show that Indonesia had 30,494 pesantren in the 2020/2021 academic year, highlighting the extensive reach and strategic influence of these institutions in shaping social, educational, and religious life. Given their extensive social networks, moral authority, and embeddedness within local communities, pesantren possess significant potential to contribute to climate adaptation and resilience-building initiatives.

A growing body of scholarship has examined the relationship between Islamic educational institutions and environmental sustainability. Studies by Mangunjaya and colleagues have demonstrated that Islamic environmental ethics can serve as an important foundation for conservation initiatives and community-based environmental action in Indonesia (Mangunjaya, 2011; Mangunjaya

et al., 2012). Similarly, research on eco-pesantren and sustainable Islamic education highlights pesantren's role in promoting environmental awareness, ecological stewardship, and sustainable development through religious education and community engagement (Karman & Hakim, 2023). These studies have contributed significantly to understanding how Islamic values can support environmental responsibility and sustainability practices.

However, the existing literature has primarily focused on environmental education, conservation ethics, and institutional initiatives within pesantren. Less attention has been given to understanding how pesantren function as resilience-building institutions that respond to climate-related stressors, economic uncertainty, and community vulnerability. Consequently, the mechanisms through which religious authority, social capital, ecological practices, and institutional networks interact to produce adaptive capacity remain insufficiently explored. This study addresses this gap by examining resilience processes within Pesantren Sirajul Huda through the analytical lens of Kumpfer's resilience framework. Research on ecological perspectives grounded in Islamic values—often referred to as Green Islam—has largely focused on discursive analyses that examine the normative relationship between Islamic teachings and environmental stewardship (Saniotis, 2012; Foltz, 2000). The concept of Green Islam emerged from broader discussions on Islamic environmentalism, which interpret ecological responsibility through key Islamic principles such as *khalifah* (vicegerency), *amanah* (trust), and *mizan* (balance). Within the sociology of religion, these principles are not merely theological doctrines but also systems of meaning that shape collective behavior and social responses to contemporary challenges. Existing studies generally emphasize sacred texts that highlight the importance of environmental care but rarely address the practical and social implementation of these values (Khalid, 2019; Schwencke, 2012). Consequently, Green Islam has primarily been understood as a normative moral framework encouraging environmental responsibility rather than as an operational model for community practice. Empirical studies demonstrating how Islamic environmental ethics are implemented at the community level, including within pesantren activities, remain limited. Thus, although the concept of Green Islam offers a normative doctrinal foundation, it has not yet been widely operationalized in concrete social practices (Saniotis, 2012; Tucker & Grim, 2001).

Current scholarship on Green Islam has successfully mapped the theological foundations of environmental stewardship through analyses of sacred texts and religious doctrines (Saniotis, 2012; Foltz, 2000). However, this body of literature often remains trapped within a normative framework, emphasizing what Islamic teachings prescribe rather than examining how Muslim communities translate these values into adaptive social practices. As a result, a persistent gap exists between eco-theological ideals and the lived experiences of religious communities facing environmental challenges. This limitation becomes particularly visible in the context of pesantren, where ecological awareness, religious authority, social capital, and community adaptation intersect in complex ways. While some scholars portray pesantren as institutions rooted in traditionalism and resistant to modern ecological discourses, others suggest that pesantren are undergoing a gradual transformation in responding to contemporary environmental challenges. Understanding this transformation requires an analytical framework that links religious values, institutional structures, and resilience processes. From an Islamic perspective, the concept of Maqashid al-Shariah provides a normative foundation for fostering human well-being and resilience. By prioritizing the protection of religion (*hifz al-din*), life (*hifz al-nafs*), intellect (*hifz al-'aql*), lineage (*hifz al-nasl*), and property (*hifz al-mal*), Maqashid al-Shariah seeks to advance collective welfare (*maslahah*) while reducing potential sources of harm and vulnerability (Asa'ari, 2021; Halim, 2022; Auda, 2008; Kamali, 2008). Similar to resilience theory, Maqashid al-Shariah emphasizes

the preservation of essential human capacities and social functioning in the face of potential threats. Both Green Islam and Maqashid al-Shariah, therefore, share important affinities with resilience scholarship, particularly regarding adaptation, protection from harm, and the maintenance of collective well-being under conditions of stress. Nevertheless, existing conceptual frameworks remain insufficient to explain how religious communities transform these normative values into practical adaptive capacities. Studies of Green Islam tend to focus on theological discourse, whereas resilience scholarship often emphasizes material resources, governance systems, or psychosocial adaptation, without adequately considering the roles of religious authority, spiritual meaning systems, and faith-based social institutions. Consequently, the interaction between religious values, social capital, institutional authority, and resilience formation remains underexplored, particularly within Indonesian pesantren communities.

Despite the strategic importance of the 30,494 pesantren in Indonesia, three important gaps remain in the literature. First, studies of Green Islam predominantly focus on theological and normative dimensions rather than empirical resilience practices. Second, resilience research has rarely examined how religious authority structures and Islamic value systems function as protective factors in responding to climate-related stressors. Third, limited attention has been given to how pesantren communities translate ecological values into collective adaptive capacities that support social well-being and food security. Previous research has also overlooked how the hierarchy of authority and the network of santri function as mechanisms for food security and adaptive capacity. Addressing these gaps requires a framework that can trace the dynamic processes by which communities identify challenges, mobilize resources, and generate adaptive responses. This study adopts Kumpfer's (1999) resilience framework rather than alternative approaches such as Ungar's (2018) social-ecological model or Brown's (2016) community resilience approach. While Ungar emphasizes the reciprocal relationship between individuals and their social environments, and Brown focuses on collective capacities and community resources, both approaches primarily concentrate on resilience outcomes and access to resources. In contrast, Kumpfer offers a process-oriented framework that systematically examines how stressors are identified, how risk and protective factors emerge, how environmental interactions occur, and how resilience capacities are subsequently developed. This processual perspective is particularly suitable for the present study because it enables a detailed examination of how pesantren communities interpret climate-related challenges, mobilize religious and social resources, and transform these resources into adaptive strategies. Kumpfer's framework, therefore, provides a more comprehensive analytical lens for capturing the dynamic relationship between religious authority, social capital, and resilience formation within pesantren communities.

Based on these considerations, this article explores the resilience processes of pesantren communities in achieving social well-being amid ongoing climate change challenges. Specifically, the study examines how pesantren communities develop resilience in response to climate change through: (1) identifying sources of problems and challenges in strengthening food security as a foundation for resilience (Barrett, 2010; Wheeler & von Braun, 2013), and (2) strengthening networks and social capital as mechanisms for adaptive capacity (Hallegatte et al., 2017; UNDP, 2016). To achieve these objectives, this article employs Kumpfer's resilience framework (1999), focusing on: (1) identifying sources of stressors and challenges, (2) identifying risk and protective factors, (3) examining environmental interaction processes, and (4) identifying internal resilience factors that enable pesantren communities to maintain and strengthen social well-being amid climate change.

2. METHODS

This study adopts a qualitative case study design grounded in an interpretive-constructivist paradigm. This approach was selected as it is uniquely suited to capturing the lived traditions and internal logic of a pesantren—a complex institution where religious authority and social practices are deeply intertwined (Creswell & Poth, 2018). Unlike generic descriptive designs, a case study allows for an in-depth exploration of how a specific religious community negotiates global issues such as climate change within its traditional framework. By employing an interpretive lens, the researchers aimed to uncover the subjective meanings that pesantren actors assign to resilience and social well-being, moving beyond external observations to understand the community's emic perspective. The research was conducted at Pesantren Sirajul Huda in Durian Village, Central Lombok, West Nusa Tenggara. This site was purposively selected as a critical case due to its unique integration of an ecological curriculum (Green Islam) within a vocational education framework (SMKI). Fieldwork was conducted over a three-month period, from August to October 2024. This duration enabled prolonged engagement with participants and sustained observation of everyday social and ecological practices within the pesantren environment. The researchers' extended presence facilitated trust-building with key actors, including the Tuan Guru, ustadz, santri, and community members, while allowing observation of both formal educational activities and informal agricultural practices that constitute the pesantren's resilience mechanisms. The three-month fieldwork period also allowed the researchers to observe recurring patterns of ecological learning activities, agricultural production processes, food security initiatives, and community interactions across different contexts of pesantren life. Repeated interactions with participants enabled continuous verification of emerging interpretations and contributed to thematic saturation, particularly regarding climate-related stressors, adaptive strategies, and the role of religious values in shaping resilience. Therefore, the fieldwork duration provided sufficient contextual depth and empirical richness to support a credible analysis of resilience processes within the pesantren community.

Informants were selected through purposive sampling to capture the pesantren's hierarchical and communal structure. The 32 informants consisted of: (1) one Tuan Guru and one ustadz representing religious authority and institutional leadership; (2) twenty santri enrolled in the SMKI program; and (3) ten community members involved in agricultural and community-based activities initiated by the pesantren. The purposive strategy was designed to ensure that participants possessed direct experience and knowledge relevant to climate adaptation, food security, and pesantren-based resilience practices. For the santri group, "active participation in ecological modules" was operationally defined as regular involvement in at least three ecological learning and practice activities organized by the pesantren, including sustainable agriculture training, environmental conservation programs, organic farming activities, waste management initiatives, and food security projects. Participants were selected based on recommendations from teachers and program coordinators, attendance records, and their demonstrated engagement in practical ecological activities. This strategy was not intended to achieve statistical representativeness but rather to ensure the selection of information-rich cases that could provide in-depth insights into the resilience processes under investigation.

The study employed multiple data collection techniques, including in-depth interviews, participant observation, and document analysis. Interview sessions were designed to explore participants' experiences and perceptions of climate change, food security concerns, adaptation responses, and the ways Islamic teachings inform resilience-building efforts. Participant observation focused on ecological learning activities, agricultural practices, social interactions, and community engagement programs. Documentary sources included institutional records, educational materials, and

reports related to pesantren programs. Data collection continued until thematic saturation was achieved, defined as the point at which additional interviews no longer generated new conceptual insights regarding climate-related stressors, resilience mechanisms, and social well-being (Saunders et al., 2018). The analytical framework was informed by Kumpfer's (1999) resilience model. The four components of the framework were operationalized as analytical categories. First, stressors were defined as climate-related challenges and environmental pressures experienced by pesantren communities, including food insecurity, changes in agricultural productivity, and environmental degradation. Second, risk and protective factors included conditions that either weakened or strengthened resilience capacities, such as economic limitations, ecological knowledge, religious values, leadership, social capital, and community networks. Third, environmental interaction referred to the processes through which pesantren members interacted with social, ecological, and institutional environments in responding to climate-related challenges. Fourth, internal resiliency factors referred to individual and collective capacities such as self-efficacy, adaptability, optimism, religious commitment, and collective responsibility.

The analysis was guided by the interactive model proposed by Miles and Huberman (1994), encompassing data reduction, data presentation, and the verification of conclusions. As a first step, interview transcripts, field observations, and relevant documents were subjected to open coding to uncover recurring concepts and significant themes within the data. These codes were then grouped into categories corresponding to the four components of Kumpfer's resilience framework. Through an iterative process of comparison and interpretation, broader themes were developed to explain how resilience was constructed and maintained within the pesantren community. The analytical process moved continuously between empirical data and theoretical concepts to ensure interpretive depth and conceptual coherence. The study employed multiple strategies to enhance the trustworthiness of the findings. First, methodological triangulation was employed by systematically comparing data collected from in-depth interviews, participant observations, and documentary sources to ensure consistency and corroboration across different forms of evidence. Second, member checking was undertaken with selected participants, including pesantren leaders and santri representatives, to verify the accuracy of interpretations and emerging themes. Third, peer debriefing was conducted among members of the research team to discuss coding decisions and thematic development. Finally, an audit trail was maintained throughout the research process to document methodological decisions, analytical procedures, and interpretive reflections, thereby enhancing the study's transparency and reliability.

The study received ethical clearance and was conducted in accordance with established ethical principles, including informed consent and the protection of participant confidentiality. In addition to adhering to formal ethical requirements, the research respected local pesantren traditions by observing *adab* and *sowan*, which emphasize courtesy and respect toward community leaders. Access to the research site was granted after obtaining permission from the *Tuan Guru*, whose authority as the spiritual and institutional leader was formally acknowledged. Participants were fully informed about the purpose of the study, their voluntary participation, and their right to withdraw at any time. To safeguard privacy, all identifying information was anonymized, particularly given the close social relationships that characterize village and pesantren environments.

3. FINDINGS AND DISCUSSION

Religious Authority, Social Capital, and Community Mobilization

The findings indicate that the relationship between Pesantren Sirajul Huda and the community of Durian Village extends beyond a functional partnership and operates as a socio-religious ecosystem supported by strong social capital. This relationship is sustained through several institutional programs that continuously connect the pesantren with the surrounding community. As presented in Table 1, three flagship programs play a central role in strengthening these relationships: Haul Majemuk, Diniyah Learning (*Majelis Pengajian*), and the Agribusiness of Food Crops and Horticulture (*Agribisnis Tanaman Pangan dan Hortikultura/ATPH*) program.

The Haul Majemuk program is a communal ritual commemorating the pesantren's founding anniversary and involves santri, religious leaders, and local residents. Since its establishment, the event has been organized annually and has become an important social arena where collective identity and communal solidarity are reinforced. Similarly, Diniyah Learning activities provide regular religious education not only for santri but also for community members. One important topic discussed in these sessions is *fiqhul bi'ah* (environmental jurisprudence), which introduces ecological responsibility as part of Islamic ethical obligations. Meanwhile, the ATPH program integrates agricultural entrepreneurship into SMKI's vocational curriculum and involves local residents in practical farming activities. Together, these programs create repeated interactions between the pesantren and the wider community, fostering trust, reciprocity, and shared responsibility.

Table 1. Flagship Programs of the Pesantren

No	Program	Participants	Description
1	<i>Haul Majemuk</i>	Community and <i>santri</i>	A ceremonial event commemorating the founding anniversary of the pesantren, involving all community elements (<i>tuan guru</i> , <i>santri</i> , and local residents). This event aims to strengthen local traditions while reinforcing collective commitment to togetherness and sustainability. As of 2025, the <i>Haul Majemuk</i> event has been held twelve times.
2	<i>Diniyah Learning / Majelis Pengajian</i>	Community and <i>santri</i>	Religious study sessions involving all community members as an effort to strengthen religious literacy, particularly in relation to environmental awareness. One of the main topics discussed is <i>fiqhul bi'ah</i> (environmental jurisprudence), which encourages deeper awareness of the importance of environmental conservation.
3	Agribusiness of Food Crops and Horticulture (<i>Agribisnis Tanaman Pangan dan Hortikultura, ATPH</i>)	Community and <i>santri</i>	An educational program integrated into SMKI curriculum that focuses on strengthening the capacity of both <i>santri</i> and community members in agricultural entrepreneurship.

Source: Processed Data from Field Observations, 2024.

Interview data further reveal that participation in these activities is strongly associated with the Tuan Guru's authority. Community members consistently described their involvement in ecological and agricultural initiatives not merely as economic participation but also as a form of religious

commitment. This finding suggests that the social capital developed within Pesantren Sirajul Huda cannot be adequately explained solely through conventional understandings of community participation. Instead, participation is embedded within a broader religious and cultural framework that shapes how individuals perceive collective action and social responsibility.

Analytically, the authority of the Tuan Guru observed in this study should be distinguished into three related but different dimensions. First, charismatic authority in Weber's (1978) sociological sense refers to followers' recognition of a leader's extraordinary personal qualities. This dimension is visible in the willingness of santri and community members to follow the ecological vision articulated by the Tuan Guru. The success of environmental programs within the pesantren cannot be separated from its role in defining ecological stewardship as a legitimate religious concern. Second, the local concept of barakah functions as a form of relational trust that connects religious authority with everyday social practice. Unlike Weberian charisma, which emphasizes personal qualities, barakah refers to the belief that association with and obedience to respected religious figures generates spiritual benefit. Community participation in pesantren programs is therefore motivated not only by practical considerations but also by expectations of spiritual value. Third, the pesantren possesses institutional capacities that enable the rapid mobilization of collective action through educational activities, religious gatherings, and agricultural programs. This organizational capacity should not be conflated with charisma itself. Rather, it represents the institutionalization of authority through structured programs and social networks.

The findings demonstrate that these three dimensions operate simultaneously in shaping resilience processes within the pesantren community. Trust generated through religious interaction encourages collective participation, while institutional mechanisms provide practical channels for translating participation into concrete environmental action. For example, the inclusion of community members in Diniyah Learning and ATPH activities facilitates the circulation of both religious and ecological knowledge beyond the pesantren's formal boundaries. As a result, the pesantren functions not merely as an educational institution but also as a community hub that facilitates cooperation and collective problem-solving. Within Kumpfer's (1999) resilience framework, these conditions can be understood as protective factors that strengthen adaptive capacity. Social trust, religious legitimacy, and institutional networks collectively create a supportive environment that enables individuals and communities to respond to socio-economic and environmental challenges. The repeated interactions among santri, religious leaders, and community members also reflect what Kumpfer describes as environmental interaction processes, whereby individuals continuously engage with their social environment to negotiate and adapt to changing circumstances. The trust established through decades of religious engagement allows the pesantren to mobilize collective action rapidly when environmental pressures or economic uncertainties emerge.

The findings also resonate with broader discussions concerning the role of religion in community resilience. Previous studies have argued that religious institutions frequently function as sources of social cohesion, moral legitimacy, and collective action (Azra, 2020; Lukens-Bull, 2005). However, the present study demonstrates that these functions are not produced automatically by religious affiliation alone. Rather, they emerge through sustained interaction between religious authority, shared values, and institutional practices. In the case of Pesantren Sirajul Huda, social capital is reproduced through recurring religious and educational activities that continuously reinforce trust and mutual obligations among participants.

Nevertheless, the findings also reveal an important structural limitation. While the Tuan Guru's

authority facilitates collective mobilization and strengthens community resilience, the sustainability of these initiatives remains closely tied to his leadership. This dependence creates a potential vulnerability, as ecological programs may struggle to maintain momentum in the absence of robust institutional succession mechanisms. In other words, the same authority that functions as a protective factor in the resilience process may also become a source of institutional risk if resilience practices are not fully embedded within organizational structures. This finding highlights the need to view resilience not only as the outcome of charismatic leadership but also as a process of institutionalization that ensures the continuity of collective action beyond individual leaders.

Overall, the evidence suggests that resilience within the Sirajul Huda community is supported by a combination of religious authority, social trust, and organizational capacity. Rather than functioning independently, these elements reinforce one another to create a resilient socio-religious ecosystem capable of mobilizing collective action in response to environmental and socio-economic challenges. The findings, therefore, extend existing discussions on resilience by demonstrating how religious authority can operate simultaneously as a cultural resource, a social mechanism, and an institutional asset within community-based adaptation processes.

Supplementary Subsistence and Ecological Adaptation

Another important finding concerns the development of ecological adaptation through organic agricultural practices implemented by Pesantren Sirajul Huda. Field observations and interview data indicate that the pesantren's ecological orientation predates the establishment of the Islamic Vocational High School (SMKI) in 2007. According to AJ (2024), discussions on environmental stewardship and food production have been introduced through Majelis Taklim activities since the 1980s. These discussions emphasized that the utilization of natural resources constitutes part of humanity's responsibility as khalifah on earth. As AJ (2024) explained, "The idea of food security practiced in this pesantren has existed for a long time and began through the majelis taklim as a way to teach both santri and congregants how God encourages humans to utilize the vast natural resources provided."

The findings show that ecological adaptation within the pesantren is implemented through collaborative agricultural activities involving santri and members of the surrounding community. Agricultural activities include seed preparation, planting, maintenance, harvesting, and distribution.

Figure 1. Planting Activities Conducted by Santri and Community Members



Source: Documentation of Pesantren Sirajul Huda, 2023.

Due to limited land availability, cultivation is carried out through a combination of polybag systems, rooftop gardening, and hydroponics. These practices demonstrate how the pesantren utilizes available resources creatively to maintain agricultural production despite spatial constraints.

The annual production records indicate outputs of approximately 50 kilograms of eggplant, 70 kilograms of tomatoes, 200 kilograms of broccoli, 200 kilograms of pakcoy, and 445 kilograms of chili. These products are consumed internally by the pesantren community and partially distributed through local markets and institutional partners. Community members interviewed during the study emphasized that the agricultural activities have reduced dependence on external food supplies while simultaneously creating opportunities for learning and economic participation. However, the findings suggest that these production outputs should not be interpreted as evidence of comprehensive food security. According to Barrett (2010), food security requires the sustained fulfillment of four interconnected dimensions: food availability, food access, food utilization, and food stability. While the agricultural activities observed at Pesantren Sirajul Huda contribute positively to food availability and partially improve access to food resources, the relatively small scale of production and limited land area indicate that the system has not yet achieved full food security at the community level. Instead, the agricultural initiatives are more appropriately understood as a form of supplementary subsistence that supports daily consumption needs, strengthens adaptive capacity, and reduces partial vulnerability to fluctuations in external food supply.

This distinction is important because it allows the findings to be interpreted within a realistic empirical framework. The significance of the pesantren's agricultural initiatives lies not primarily in production volume but in their role as adaptive strategies developed under conditions of environmental and economic constraints. The use of rooftop cultivation, hydroponic systems, and polybag farming reflects a practical response to land scarcity and demonstrates the community's capacity to modify its environment to sustain livelihoods and food provision. Beyond their economic value, these agricultural practices are embedded within a broader religious framework. Interviews with pesantren leaders and administrators indicate that environmental stewardship is consistently framed as part of Islamic ethical responsibility. The development of organic agriculture is therefore understood not merely as a technical solution to food-related challenges but also as an expression of religious values. In this regard, ecological adaptation is linked to the principles of Green Islam, which emphasize stewardship (*khalifah*), trust (*amanah*), and balance (*mizan*) in human relationships with nature (Saniotis, 2012; Foltz, 2000).

The findings further suggest that agricultural activities within the pesantren can be interpreted through the lens of *Maqashid al-Shariah*. The effort to secure food resources and sustain livelihoods reflects the protection of life (*hifz al-nafs*) and property (*hifz al-mal*), both of which are central objectives of Islamic law (Auda, 2008; Kamali, 2008; Asa'ari, 2021; Halim, 2022). Through this process, environmental adaptation is transformed from a purely technical intervention into a religiously meaningful practice that integrates ecological responsibility with social welfare. Within Kumpfer's (1999) resilience framework, the agricultural initiatives observed in Pesantren Sirajul Huda illustrate environmental interaction processes through which individuals and communities actively respond to external stressors. Land scarcity, economic uncertainty, and climate-related challenges function as stressors, while ecological knowledge, religious values, community participation, and institutional support function as protective factors. Through continuous interaction between these factors, the pesantren develops adaptive capacities that strengthen resilience at both the individual and community levels.

The findings, therefore, demonstrate that ecological adaptation within Pesantren Sirajul Huda is best understood as a process of resilience-building rather than as a complete solution to food insecurity. The contribution of the pesantren lies in its ability to transform limited resources into opportunities for learning, cooperation, and adaptation while simultaneously grounding these practices within an Islamic

ethical framework. This combination of ecological innovation, religious meaning-making, and collective participation constitutes an important mechanism through which resilience is cultivated within the pesantren community.

Economic Empowerment and Institutional Resilience

The third finding concerns the role of economic empowerment in strengthening community resilience. Beyond its role as a religious and educational institution, Pesantren Sirajul Huda has developed several productive economic activities that involve both santri and members of the surrounding community. These activities are primarily centered on agricultural production and are supported by the integration of several vocational programs within the Islamic Vocational High School (SMKI), including Agribusiness, Multimedia, and Hospitality.

As presented in Table 2, the pesantren produces several agricultural commodities, including eggplant, tomatoes, broccoli, pakcoy, and chili.

Table 2. Economic Activities

No	Type of Product	Participants	Production per Year (kg)
1	Eggplant (Polybag System)	Santri and Community	± 50
2	Tomato (Polybag System)	Santri and Community	± 70
3	Hydroponic Broccoli	Santri and Community	± 200
4	Hydroponic <i>Pakcoy</i> (bok choy)	Santri and Community	± 200
5	Chili	Santri and Community	± 445

Source: Documents of Pesantren Sirajul Huda, 2024.

Although production volumes remain relatively modest due to limited land availability, these activities provide opportunities for community participation in productive economic endeavors. According to MJ (2024), agricultural activities are maintained despite land constraints because they serve both educational and economic functions. Rooftop cultivation, hydroponic systems, and polybag farming have enabled the pesantren to optimize available space while maintaining continuous agricultural production. Field observations further indicate that economic activities within the pesantren are not limited to agricultural production alone. The Agribusiness program is supported by the Multimedia and Hospitality programs, creating a complementary institutional ecosystem. The Multimedia program helps promote agricultural products through digital platforms, while the Hospitality program facilitates market access through partnerships with local hotels and tourism-related businesses. As a result, agricultural products are distributed not only to local traders but also, on certain occasions, to hospitality-sector partners. The establishment of the SMKI Food Court further expands this economic network by providing a dedicated space for marketing agricultural products cultivated by santri and community members through a profit-sharing arrangement.

Figure 2. SMKI Food Court



Source: Research Documentation, 2024.

The findings suggest that these activities contribute to economic diversification within the pesantren community. Prior to the development of these programs, many community members relied heavily on seasonal agricultural labor, particularly within the tobacco sector. The pesantren's initiatives have created alternative opportunities for income generation and participation in productive activities. Although the scale of economic benefits remains limited, participants reported that involvement in agricultural production has helped supplement household income and reduce economic vulnerability, particularly during periods of uncertainty following the COVID-19 pandemic. From a resilience perspective, these initiatives serve as mechanisms to strengthen adaptive capacity. Kumpfer (1999) argues that resilience is shaped by the interaction between risk factors and protective factors within a particular social environment. In the context of Pesantren Sirajul Huda, post-pandemic economic instability, fluctuating agricultural markets, and limited land resources represent important risk factors. At the same time, vocational education, institutional support, social networks, and collective participation serve as protective factors that enable individuals and communities to respond constructively to these challenges.

The integration of Agribusiness, Multimedia, and Hospitality programs illustrates how environmental interaction processes operate within the resilience framework. Rather than responding passively to economic constraints, the pesantren actively modifies its social and economic environment by creating new channels for production, promotion, and distribution. These activities demonstrate a form of adaptive innovation in which educational resources are transformed into practical mechanisms for livelihood support and community development. An important finding is that economic activities within the pesantren are consistently framed within Islamic ethical principles. Interview data indicate that economic production is not viewed solely in terms of profit maximization but is guided by the principle of *halalan tayyiban*, emphasizing lawful, ethical, and socially beneficial economic practices. This ethical orientation influences both production processes and marketing strategies. Consequently, economic empowerment within the pesantren is understood not merely as an economic objective but also as part of a broader commitment to social welfare and communal responsibility.

These findings support previous studies suggesting that religious institutions can contribute to local economic development by mobilizing social capital and collective action (Azra, 2020; Lukens-Bull, 2005). However, the present study extends this discussion by demonstrating that economic resilience

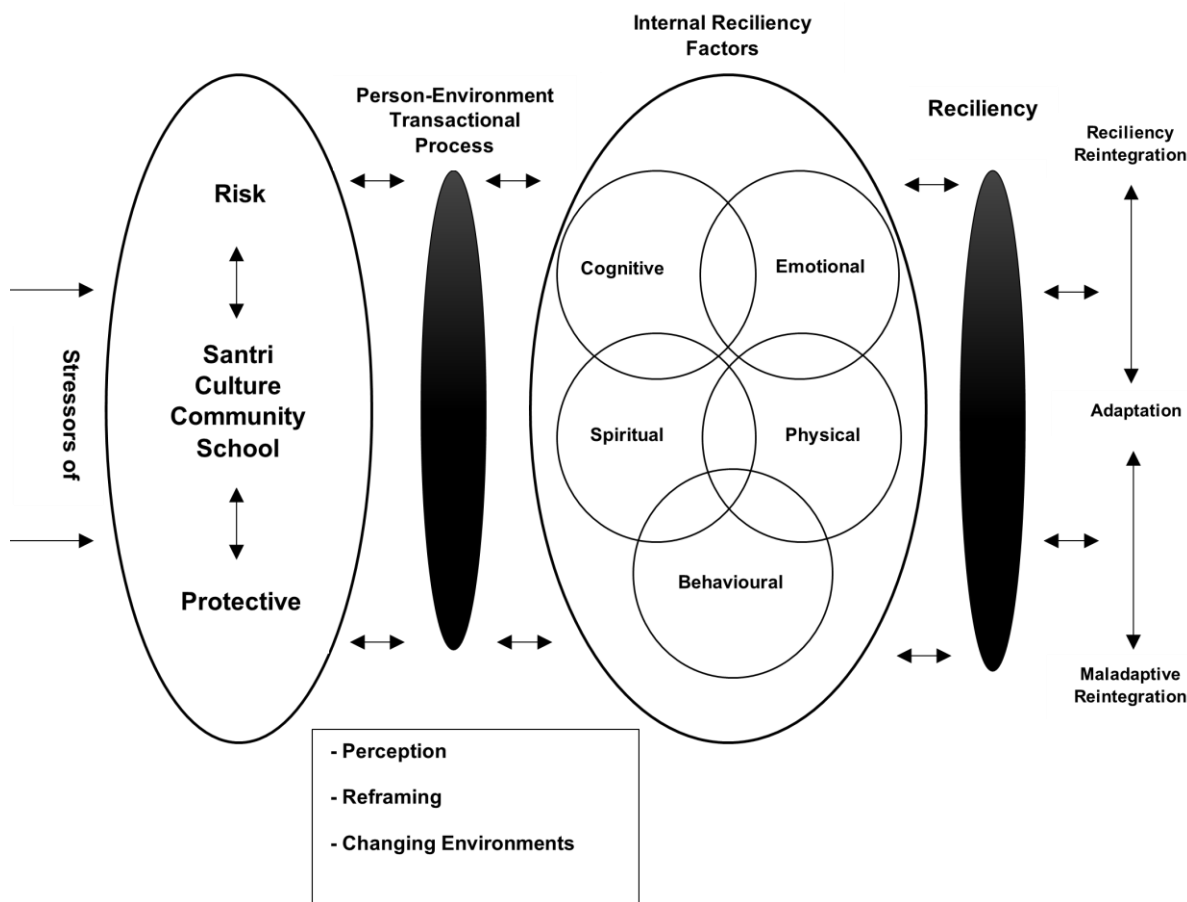
emerges not only through access to material resources but also through the integration of educational, religious, and economic functions within a single institutional framework. The pesantren's ability to connect agricultural production, vocational education, and community participation creates a locally embedded resilience mechanism that strengthens both economic and social well-being.

Nevertheless, the findings also reveal important limitations. Production remains constrained by land availability, financial resources, and market scale. Consequently, the economic system developed by the pesantren should not be interpreted as a comprehensive model of rural economic transformation. Rather, it represents a localized resilience strategy that contributes to livelihood diversification, supplementary income generation, and the strengthening of community adaptive capacity. Its significance lies not in its scale but in its ability to create sustainable opportunities for participation and collective learning within the pesantren environment. Overall, the evidence suggests that economic empowerment at Pesantren Sirajul Huda functions as an integral component of resilience formation. Through the interaction of vocational education, agricultural production, ethical economic principles, and community participation, the pesantren creates opportunities for adaptation that help individuals and communities navigate socio-economic uncertainty while maintaining their social and religious commitments.

Implications for Resilience Theory and Pesantren Studies

The findings of this study contribute to the growing literature on resilience by demonstrating how resilience processes are shaped not only by material resources and institutional arrangements but also by religious authority and shared systems of meaning. While resilience scholarship has traditionally emphasized economic assets, governance structures, and social networks as primary determinants of adaptive capacity (Brown, 2016; Ungar, 2018), the case of Pesantren Sirajul Huda suggests that religious institutions may function as important sites for the production and mobilization of resilience resources. Using Kumpfer's (1999) resilience framework, the findings reveal a coherent process through which resilience is constructed within the pesantren community.

Figure 3. Kumpfer's Resilience Framework



Source: Processed Research Data, 2024.

The principal stressors identified in this study include climate-related uncertainty, limited land resources, and socio-economic pressures following the COVID-19 pandemic. These stressors generated challenges for household livelihoods, agricultural production, and community welfare. However, rather than producing social disintegration, these pressures stimulated adaptive responses, supported by a range of protective factors embedded within the pesantren environment.

The study identifies several protective factors that played a significant role in strengthening resilience. These include religious leadership, social capital, ecological knowledge, institutional support, and collective participation. Among these factors, the authority of the Tuan Guru emerged as a particularly important resource for mobilizing collective action. Nevertheless, the findings suggest that resilience cannot be attributed solely to charismatic leadership. Instead, resilience emerges through the interaction between religious authority, community trust, and institutional mechanisms that translate values into practical programs. In this sense, the pesantren functions as an intermediary institution capable of transforming moral commitments into adaptive action.

The environmental interaction processes identified in this study further illustrate how resilience is socially constructed through everyday practices. Activities such as Haul Majemuk, Diniyah Learning, ATPH, organic farming, and the SMKI Food Court provide arenas through which religious values, ecological awareness, and economic initiatives are continuously negotiated and reproduced. These activities enable participants to reinterpret environmental challenges as collective responsibilities and to develop practical responses that support both livelihoods and community well-being. The findings therefore support Kumpfer's argument that resilience is not a static characteristic but a dynamic process shaped through ongoing interaction between individuals and their environments.

The study also contributes to discussions of internal resiliency factors. Existing resilience literature frequently conceptualizes internal resilience in terms of cognitive, emotional, behavioral, and psychological capacities (Kumpfer, 1999; Reivich & Shatte, 2002). At Pesantren Sirajul Huda, these capacities are reinforced through religious education and collective socialization. Adaptability, perseverance, responsibility, and optimism are not cultivated solely at the individual level but are embedded within institutional culture and religious practice. This finding suggests that internal resiliency may be socially produced and maintained through shared moral frameworks rather than emerging exclusively from individual psychological attributes.

The findings also contribute to the literature on Green Islam. Previous studies have largely examined Green Islam as a normative discourse emphasizing ecological stewardship through concepts such as *khalifah*, *amanah*, and *mizan* (Foltz, 2000; Saniotis, 2012; Khalid, 2019). While these studies have successfully demonstrated the theological foundations of environmental responsibility, empirical evidence regarding how such values are translated into community practices remains relatively limited. The present study shows that Islamic environmental ethics can serve as practical resources for resilience-building when institutionalized through educational programs, agricultural activities, and community engagement. In this regard, Green Islam functions not only as a moral discourse but also as a social mechanism that supports adaptation and collective action. Similarly, the findings extend discussions on *Maqashid al-Shariah* by demonstrating how the objectives of protecting life (*hifz al-nafs*) and protecting property (*hifz al-mal*) can be operationalized through local resilience practices. Agricultural initiatives, ecological education, and livelihood diversification are interpreted by participants as efforts to safeguard both human well-being and economic sustainability. Consequently, resilience-building within the pesantren is understood not merely as a technical response to environmental challenges but also as a religiously meaningful practice aimed at promoting *maslahah* (public welfare).

An important limitation of this study concerns the gender dimension of climate resilience. Although previous studies have shown that climate change disproportionately affects women (UN Women, 2009; KemenPPPA, 2023; Djoudi et al., 2016), gender was not employed as a primary analytical category in the present research. This limitation reflects the study's focus on institutional resilience processes within the pesantren rather than gender-differentiated experiences of climate adaptation. Future research may build upon these findings by examining how women and men experience, negotiate, and contribute to the formation of resilience within pesantren communities. Overall, the findings challenge the common perception of pesantren as institutions primarily concerned with religious instruction and detached from contemporary environmental issues. The case of Pesantren Sirajul Huda demonstrates that traditional Islamic institutions can function as important actors in climate adaptation by integrating religious authority, ecological values, social capital, and economic initiatives into a coherent resilience strategy. Rather than viewing tradition and modernity as opposing forces, the findings suggest that pesantren resilience emerges through the capacity to synthesize inherited religious traditions with contemporary ecological and socio-economic challenges. This synthesis enables the pesantren to contribute not only to religious education but also to community adaptation, social well-being, and sustainable development.

4. CONCLUSION

This study concludes that resilience within Pesantren Sirajul Huda is not merely a technical adjustment to climate-related challenges but a socio-religious process through which environmental pressures are interpreted, negotiated, and transformed into collective action. By employing Kumpfer's (1999) resilience framework, the study demonstrates that climate-related uncertainty, limited land resources, and post-pandemic economic pressures function as stressors that activate a range of protective factors, including religious leadership, social capital, ecological knowledge, institutional support, and community participation. Rather than responding to these challenges solely through technical adaptation, the pesantren integrates Islamic values, ecological practices, and vocational education into a coherent resilience strategy that contributes to social well-being and adaptive capacity.

The findings also demonstrate that the relationship between religious authority and resilience is more complex than commonly assumed in resilience scholarship. The authority of the Tuan Guru operates not only through personal influence but also through the institutionalization of trust, moral legitimacy, and collective participation. Based on these findings, this study proposes the concept of charismatic resilience, defined as a form of community resilience in which adaptive collective action is facilitated by the interaction between charismatic religious authority, relational trust, and institutional mechanisms that mobilize social participation in response to environmental or socio-economic stressors. In this formulation, charismatic resilience consists of three interrelated dimensions: (1) the recognition of religious authority by community members, consistent with Weber's concept of charismatic authority; (2) trust-based social relationships embedded in local understandings of *barakah*; and (3) the institutional capacity to translate authority and trust into coordinated collective action. Rather than replacing existing resilience frameworks, the concept seeks to explain how resilience processes operate in religious communities where authority structures play a central role in shaping adaptive responses.

The study further contributes to the literature on Green Islam by demonstrating that Islamic environmental ethics can function not only as a theological discourse but also as a practical resource for resilience-building. The case of Pesantren Sirajul Huda shows how ecological stewardship, food production, and economic empowerment are integrated into everyday institutional practices. At the same time, the findings suggest that the agricultural initiatives developed by the pesantren are better understood as a form of supplementary subsistence and localized adaptation rather than as comprehensive food security. Their significance lies in strengthening adaptive capacity, reducing partial dependence on external resources, and creating opportunities for collective learning and participation. Several limitations should be acknowledged. First, this research was conducted as a single-site case study within one pesantren community. Consequently, the findings are intended to provide analytical transferability rather than statistical generalizability. The value of the study lies in developing conceptual insights that may inform understanding of similar socio-religious contexts, rather than in producing universally representative conclusions. Second, as with many qualitative studies conducted in hierarchical institutions, the presence of researchers may have influenced participant responses. Although prolonged engagement, triangulation, and member checking were employed to enhance credibility, the possibility of social desirability bias cannot be entirely ruled out, particularly in interviews with actors who occupy different positions within the pesantren hierarchy. Third, the study captures resilience processes at a specific moment in time and therefore cannot assess how ecological values, adaptive practices, and institutional commitments evolve across generations. The absence of a longitudinal dimension limits the present research's ability to evaluate the long-term durability of resilience mechanisms and their sustainability beyond current leadership structures.

Future research may build upon these findings through longitudinal studies examining the

intergenerational transmission of ecological values among santri after they leave the pesantren. Comparative studies involving pesantren with different theological and organizational orientations would also contribute to a more nuanced understanding of how religious authority shapes resilience processes across diverse Islamic communities. In addition, further research is needed to test, refine, and operationalize the concept of charismatic resilience in different socio-religious settings to determine its analytical usefulness beyond the case examined in this study.

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