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The Islamic Energy Garden (IEG) Framework for Sustainable Living in Malaysian University Campuses Based on Maqasid Shariah

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ABSTRACT

An Islamic Energy Garden (IEG) refers to a garden concept that merges Islamic principles and sustainable energy practices aligned with Maqasid Shariah. The IEG provides a sustainable living environment that harmonises nature, community, and Islamic principles. Despite the growing interest in Islamic gardens, however, in Malaysia, there is no specific design framework for Islamic Garden in campus environments that integrates sustainable design practices. This paper presents a comprehensive review and proposes prospective research directions for the establishment of the Islamic Energy Garden (IEG) Framework for Sustainable Living in Malaysian Campuses in line with the Maqasid Shariah. The review encompasses an analysis of the concept of IEG within the Malaysian context in accordance with the principle of Maqasid Shariah (Protection of Faith, Life, Intellectual, Lineage, and Property). These initial IEG conceptual framework cover various aspects, including spiritual connection, well-being, knowledge dissemination, social integration and environmental sustainability. It is hoped that this research outcome will serve as a transformative and exemplary model for implementing a sustainable living in the campus environment, promoting a culture of environmental consciousness among the campus community, which is in line with the 17 Big Bolds in Economy Madani, which is 'Enculturation of Madani society.

Keywords: *Campus design, Islamic energy garden, maqasid shariah, sustainable.*

Traditional garden designs often overlook sustainable energy practices, leading to increased environmental impact. There is an indication that inefficient lighting, water features reliant on

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non-renewable energy sources, and a lack of renewable energy integration contribute to higher energy consumption and carbon emissions. Nevertheless, non-sustainable garden designs may contribute to resource depletion, especially regarding water usage. Substantially, inefficient irrigation systems and water features can lead to excessive water consumption. Despite several research on Islamic Gardens in Malaysia focusing on values, elements, and physical design, there remains a critical gap: the absence of a comprehensive framework integrating sustainable practices and *Maqasid Shariah for* Islamic Energy Garden (IEG) in a campus environment. By implementing renewable energy sources within Islamic Gardens can contribute to reducing carbon footprints and serve as models for eco-friendly, resource-efficient spaces within the campus environment. In line with the long-term objectives of ASEAN countries, the Malaysian government has recently set a target of achieving 31% renewable energy generation by 2025, which aims to support ongoing efforts to reduce carbon emissions (Islam et al., 2023). Therefore, aligned with one of Malaysia MADANI's six core values: sustainability, this research showcases commitment by integrating renewable energy technologies like solar panels and rainwater harvesting within the IEG.

On the other hand, campus life can be demanding, leading to stress and anxiety among students. Mental health is a global concern impacting nearly one billion people, according to the World Health Organization (2022). As mental health concerns increase, universities have an essential role in supporting their students' psychological and emotional well-being (Husin et al., 2022; Arifin et al., 2023). One effective approach to enhance mental health and emotional well-being is through the integration of natural environments into campus spaces (Baur, 2022, Liu et al., 2022). Most notably, several studies consistently demonstrate the positive impact of nature on mental health (Baur, 2022, Liu et al., 2022; Boyd, 2022; Zhang et al., 2023). Access to green spaces, such as the Islamic Garden, can reduce stress levels, improve mood, and enhance cognitive function and social interaction. However, previous studies on Islamic Garden (Jani et al.,2015; Jani et al., 2018; Asif et al., 2015) have primarily focused on expert opinions and case studies, often overlooking user perspectives. This gap necessitates a research effort to develop a holistic framework that aligns with Maqasid Shariah principles while integrating sustainable design practices and emphasising user needs. Insights into user perceptions are crucial for ensuring that the garden design meets the community needs and expectations. This approach not only honours the spiritual and ethical guidelines of Maqasid Shariah but also promotes environmental sustainability and user-centered design, creating a space this is both meaningful and beneficial to its users.

Understanding people's perceptions of environmental, social, and psychological aspects ensures that the garden design effectively addresses these needs. In the present study, the chosen case study centres on the campus mosque. A mosque, deeply embedded in Islamic culture, serves as an institution that provides an inclusive platform for people of various religions and ethnicities to engage in constructing a unified community (Abu et al., 2022). However, the mosque currently grapples with a significant challenge, which is a lack of community engagement among staff, students, and society. This issue not only prevents the creation of a vibrant and inclusive environment within the mosque precinct but also hinders the development of a cohesive community and shared experiences among diverse stakeholders on campus. Frequently, mosques play a dual role by fostering a sense of community and influencing relationships in their surrounding areas (Abu et al., 2022).

The implementation of the IEG within the campus becomes a catalyst for enhanced community interaction, aligning line with the 17 Big Bolds of Malaysia Madani, which is 'Enculturation of MADANI society. This initiative fosters a profound sense of belonging, collaboration, and collective responsibility, thereby contributing to the creation of a resilient and sustainable living environment on campus. By creating a robust framework for IEG and fostering sustainable living within campus environments following Maqasid Shariah, it is hoped that these gardens will serve as holistic spaces, harmonising environmental consciousness and community engagement, thereby cultivating a sustainable ethos that aligns with Maqasid Shariah, principles for the betterment of all stakeholders within the campus community.

Concept of the Islamic Energy Garden (IEG)

Islamic gardens, influenced by religion, climate, and geography, have emerged as a distinct form of landscape art since the 7th century. They have been shaped by the cultural traditions of diverse societies (Goker et al., 2021). With the growing initiative, the Islamic Garden served as an idyllic setting for leisure and reflection while also significantly fostering agricultural development within communities (Asif et al., 2015). In the modern world, the philosophy and ideology of Islamic gardens can potentially revitalise cultural landscapes globally and address sustainability concerns (Asif et al., 2015). According to Jani et al. (2015), the defining aspect of an Islamic Garden is the atmosphere it cultivates. Rasdi (2010) emphasised that this environment serves as a catalyst for remembering God and exemplifying the values inherent in concepts such as Tawhid (oneness of God), Khalifah (vicegerency), Khilqat (environment), Jihad (devotion), Adl (justice), Ibadah (worship), Ilm (knowledge), and Jamal (beauty) as highlighted in the Quran.

Additionally, Jani and Harun (2018) identified water and plants as crucial elements strongly associated with the Islamic Garden. These natural features not only enhance the garden's aesthetic appeal but also imbue it with symbolic significance. As supported by Goker et al. (2021), Islamic gardens are perceived as representations of paradise and serve as functional spaces for daily life. In the light of the aforementioned representation, Gardens have often been symbolised and referred to as a representation of Paradise, as highlighted in the Quran. *"Allah has promised the believers, both men and women, Gardens under which rivers flow, to stay there forever, and splendid homes in the Gardens of Eternity, and—above all—the pleasure of Allah. That is truly the ultimate triumph".* (At-Tawbah: 72). The verse from Surah At-Tawbah (9:72) mentioned the promise of Allah to believers, both men and women, of Gardens beneath which rivers flow, and beautiful mansions in Gardens where they will dwell eternally. The verse emphasises that ultimate bliss and happiness come from attaining the Good Pleasure of Allah. Just as the verse describes the beauty of gardens with flowing rivers, the IEG, incorporating natural elements such as trees, plants, and water features, symbolises the gardens mentioned in the Quranic verse.

In the context of the current study, the term 'Islamic Energy Garden' (IEG) refers to a concept that combines Islamic principles, sustainable design, and renewable energy technologies to create a garden or outdoor space. It involves integrating renewable energy sources, such as solar power (Aziz, 2019; Rashid, 2011) or rainwater harvesting technology, within the garden's infrastructure to generate clean and sustainable energy (Hasritanto, 2021; Salikha et al., 2020; Eusof et al., 2015). The intended garden may also include educational elements that raise awareness about Islamic teachings related to environmental responsibility and the importance of sustainable practices. Ultimately, the IEG goes beyond being a traditional garden by actively harnessing renewable energy sources, promoting energy efficiency, and creating a harmonious balance between nature, aesthetics, and sustainability.

Islamic Energy Garden in accordance with Maqasid Shariah

Maqasid shariah (the objectives of Islamic law) is an integral concept that evolves alongside the revelations of al-Qur'an and al-Sunnah (Sarkawi et al., 2017). It is a discipline of knowledge that addresses the goals, objectives, principles, and fundamental values of Shariah, which considered theoretical and practical mechanisms in the context of implementing Islam in the modern era (Zakaria et al., 2024). The origins of the Maqasid theory can be traced back to the era of the second caliph, Umar bin al-Khattab (d. 644), and the Maliki School of Islamic jurisprudence. The school emphasised the importance of public interests or Maslahah. It was further developed by the theologian Abu Hamid al-Ghazali (d. 1111) in the twelfth century (Sarkawi et al., 2017). Al-Ghazali introduced a categorisation system that divides Maqasid into three levels of importance: the Dharuriyyah (Necessity), the Hajiyyah (complementaries), and the Tahsiniyyah (desirables or embellishments) (Sarkawi et al., 2017). This hierarchical framework helps in understanding the priorities within Islamic jurisprudence. Furthermore, when discussing the concept of Maqasid Shariah, Al-Ghazali referred to the five fundamental aspects of human life: the protection of faith,

life, intellect, lineage, and property (Zakaria et al., 2024; Sarkawi et al., 2017) as shown in Figure 1.

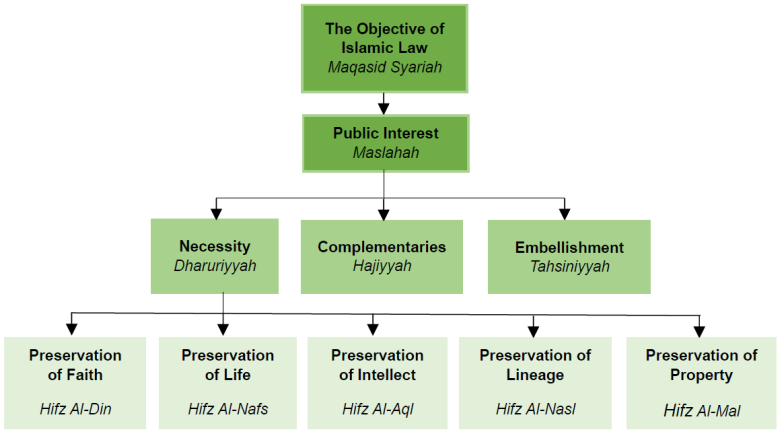

Figure 1: The key components of Maqasid Shariah (Source: Illustrated by author based on Sarkawi et al. 2017).

Maqasid shariah provides a framework for guiding various aspects of human life, including environmental sustainability (Nasir et al., 2022; Yaakub et al., 2020) and energy efficiency (Kandar et al., 2023). Within the IEG concept, Maqasid shariah serves as a foundation for creating IEQ that aligns with Islamic principles and contributes to the well-being of individuals and communities. These principles provide a comprehensive framework for understanding the higher purposes and goals of Islamic principles. In this context, Islamic Energy Gardens, based on the Maqasid shariah, can be conceptualised as environmentally sustainable spaces that prioritise the fulfilment of the broader goals of Maqasid Shariah as follows:

Preservation of Faith (Hifz al-Din):

IEG can foster an environment that nurtures and strengthens faith. They can provide serene spaces for prayer, meditation, and reflection. By incorporating trees and greenery in the IEG, the garden becomes a space where individuals can connect with nature, find tranquillity, and engage in remembrance of Allah. A previous study emphasised that respondents in courtyard gardens enjoy spending time there for contemplation, as the trees remind them of Allah and engage in zikr (Idris, 2020). In addition, the sight, sound, light, breeze, and fragrance of trees can serve as gentle reminders of the Creator, fostering a sense of humility, gratitude, and mindfulness in those who visit the garden. As the Quran mentions, *"Do you not see how Allah compares a good word to a good tree? Its root is firm, and its branches reach the sky, (24) always yielding its fruit every season by the Will of its Lord. This is how Allah sets forth parables for the people, so perhaps they will be mindful."* (Ibrahim:24-25). This verse highlights the significance of trees concerning the remembrance of Allah through 'zikir', urging us to reflect upon the enduring impact of good words and the spiritual nourishment that comes from engaging in the remembrance of Allah. A prominent recent example of an eco-sustainable mosque that is based on traditional Islamic design principles is the Europe's first eco-friendly mosque.

This mosque, as shown in Figure 2, has a serene garden and provides a conducive environment for individuals to engage in the remembrance of Allah. The garden serves as religious contemplation and delight, a space for contemplation, spiritual connection, and a reminder of Allah's presence and blessings (RIBA, 2021).

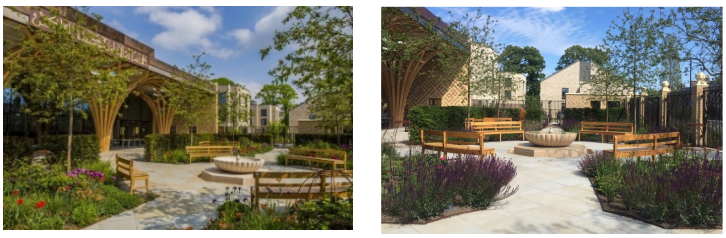

Figure 2: The garden at Cambridge Central Mosque, UK (Source: Emma Clark 2020).

Preservation of Life (Hifz al-Nafs):

The Hifz al-Nafs focuses on preserving human life and prioritising safety in the proposed IEG. The intended IEG has the potential to promote physical health and well-being by offering spaces for exercise and recreational activities while also fostering a clean and pollution-free environment. Previous studies (Idris et al., 2022; Aksoy, 2019) have emphasised the importance of factors such as outdoor thermal comfort, diverse plant varieties, and sufficient seating in the garden. Apart from that, to ensure safety, it is crucial to carefully select non-harmful and thorn-free plants, especially when considering the presence of children (Idris et al., 2022). Implementing safety measures, such as well-maintained pathways, appropriate landscape design, proper lighting, and emergency response systems, is essential for preserving life within the IEG.

Moreover, a previous study revealed that incorporating additional greenery, such as shaded canopies and shrubs, can significantly improve microclimatic conditions and enhance thermal comfort within the areas surrounding the courtyard gardens (See Figure 3). The study suggested that courtyards with a higher tree density exhibited lower air temperatures compared to spaces with fewer trees (Idris, 2020).

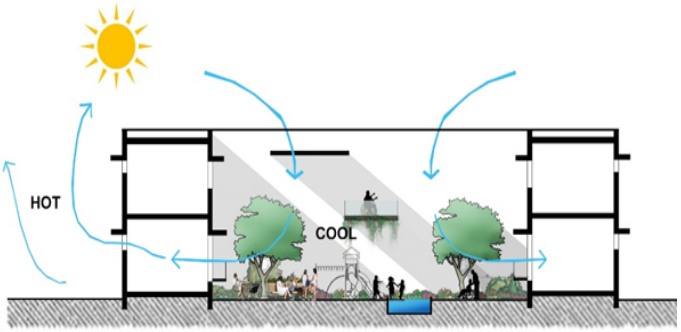

Figure 3: The implementation of passive design strategies in the courtyard gardens effectively enhances the thermal comfort of the buildings (Source: Idris 2020).

Preservation of Intellect (Hifz al-Aql):

Additionally, the Hifz al-Aql focuses on preserving the intellect, which the IEG can use to foster intellectual growth and knowledge in society. Previous studies have emphasised that, in addition to being places of worship, mosques can function as community development centers (Rasdi, 1998) and hubs for socialisation and healing (Omar et al., 2018). In addition to serving as healing spaces, the proposed IEGs can serve as learning centres, offering workshops, seminars, and lectures on environmental sustainability and renewable energy from an Islamic standpoint. A notable case study exemplifying the practical implementation of collaborative efforts and a centre for learning focused on sustainability can be observed at As Siddiq Mosque in Perak (Omar et al., 2018). The active engagement and cooperation among several industrial partnering entities demonstrate a commendable endeavour to effectively implement collaboration for enhancing the social sustainability of the mosque (See Figure 4 (a)). Other than that, the establishment of edible gardens within As-Siddiq Mosque has become an appealing attraction, serving as an outdoor

learning area for neighbouring school children (See Figure 4 (b)). Furthermore, Tuanku Mukhriz Islamic Complex in USIM (the selected case study sites) actively engages in numerous activities involving children and the local community, providing an ideal platform to introduce the concept of sustainability and share information on the Islamic energy garden concept in USIM, aligning with the principles of Maqasid Shariah.

(a) (b)

Figure 4: (a) Collaborative sustainability initiatives are implemented at As Siddiq Mosque in Perak, (b) The edible gardens at As-Siddiq Mosque function as an outdoor learning area for school children. (Source: Omar et al. 2018).

Preservation of Lineage (Hifz al-Nasl):

Preservation of lineage is a crucial aspect of an individual's life. Islam places significant emphasis on upholding human dignity and the importance of safeguarding it. This includes protecting individuals' privacy rights and refraining from exposing or accusing others of inappropriate or immoral conduct, which can potentially undermine their dignity and lineage (Musa, 2021). Balancing the protection of individual privacy and rights with social interaction and engagement in a garden requires careful consideration and design (Jani et al., 2015). In the context of the educational campus garden, the IEG can be designed to offer diverse seating options in the garden, including communal areas for socialising and private seating for personal privacy. A cultural art installation can be integrated into the IEG to serve as a visual representation of the diverse values, heritage, and cultural activities present on the USIM campus. For instance, sculptures, artwork, and garden layouts depict Islamic Architectural heritage, culture, and values. IEG can also provide spaces that promote community cohesion, social interaction, and the preservation of lineage, as shown in Figure 5. This can be achieved by designating specific areas within the garden as gathering spaces where students, faculty, and staff can come together to learn and share stories. By setting up interactive learning stations that provide information about USIM Integration of Aqli and Naqli (INaQ) values, Muslim scientists throughout history and Maqasid sustainable practice, visitors will have the opportunity to explore engage with these concepts within the campus community.

(a) (b)

Figure 5: (a) Student engagement in the courtyard garden of Al-Azhar Mosque *(*Source: shorturl.at/dAIS1); *(b)* The garden at Cambridge Central Mosque, UK (Source: Morley von Sternberg).

Preservation of Property (Hifz al-Mal):

Rainwater harvesting is directly related to the preservation of property in several ways. Specifically, by capturing and storing rainwater, property owners can reduce their reliance on external water sources. This, in turn, reduces the strain on these resources and helps preserve

them for future use. The proposed IEG aims to be integrated with the rainwater harvesting systems which will be used to irrigate the landscape in the IEG and for the water fountain. Several green mosques in Malaysia (Masjid Cyberjaya, As-Siddiq Mosque in Perak) and neighbouring countries (e.g., Masjid Azzikra in Indonesia) (Hidayat et al., 2018) have utilised this rainwater harvesting system as shown in Figure 6 (a) and (b). These mosques demonstrate their effective water resource management by utilising the rainwater harvesting system. Specifically, rainwater is stored and used for various purposes, and any excess water collected during ablution is also utilised for watering the trees surrounding the mosque (Omar et al., 2018; Ahmad, 2015; Hidayat et al., 2018). The Masjid Azzikra has implemented a water recycling system to recycle water used for ablution, which is an interesting initiative. The majority of mosque visitors (97%) use water taps for ablution, while only a few use a pail and dipper in the toilet due to other necessities (Hidayat et al., 2018). This sustainable practice not only promotes water conservation but also leads to substantial savings on water bills and supporting the growth of surrounding greenery. Similarly, at the Cyberjaya Mosque, the utilisation of rainwater has resulted in significant cost reductions, potentially reducing water bill expenses by up to 70% (Ahmad, 2015).

(a) (b)

Figure 6: (a) Rainwater harvesting system at Azzikra Mosque in Indonesia *(Source: Hidayat et al., 2018);* (b) Rainwater harvesting system at As-Siddiq Mosque, Perak (Source: Omar et al. 2018).

Based on the literature review that has been discussed, a preliminary conceptual framework of the IEG under five components of Maqasid Shariah (i.e., The preservation of faith, life, intellect, lineage, and property), as shown in Figure 7. This preliminary IEG framework spans multiple dimensions, including (i)spiritual connection, (ii) well-being, (iii) knowledge dissemination, (iv) social integration, and (v) environmental sustainability. The IEG framework incorporates the principles of Maqasid Shariah to promote sustainable living within campus environments. Maqasid Shariah, which emphasises the preservation of faith, life, intellect, lineage, and property, serves as the foundational guide for the IEG's design and implementation. For instance, the preservation of faith (Hifz Al-Din) is facilitated through serene environments, meditation spaces, and natural elements, fostering spiritual connection among users. The preservation of life (Hifz Al-Nafs) emphasises eco-friendly materials and pollution-free environments, enhancing overall well-being. Intellectual growth (Hifz Al-Aql) is supported by educational spaces and interactive exhibits, promoting knowledge dissemination. Social integration is achieved through dedicated community engagement spaces and collaborative activities, aligning with the preservation of lineage (Hifz Al-Nasl). In addition, environmental sustainability is ensured through advanced systems such as rainwater harvesting and smart irrigation, reflecting the preservation of property (Hifz Al-Mal). This holistic approach not only adheres to Islamic values but also serves as a model for integrating spirituality and sustainability in educational settings.

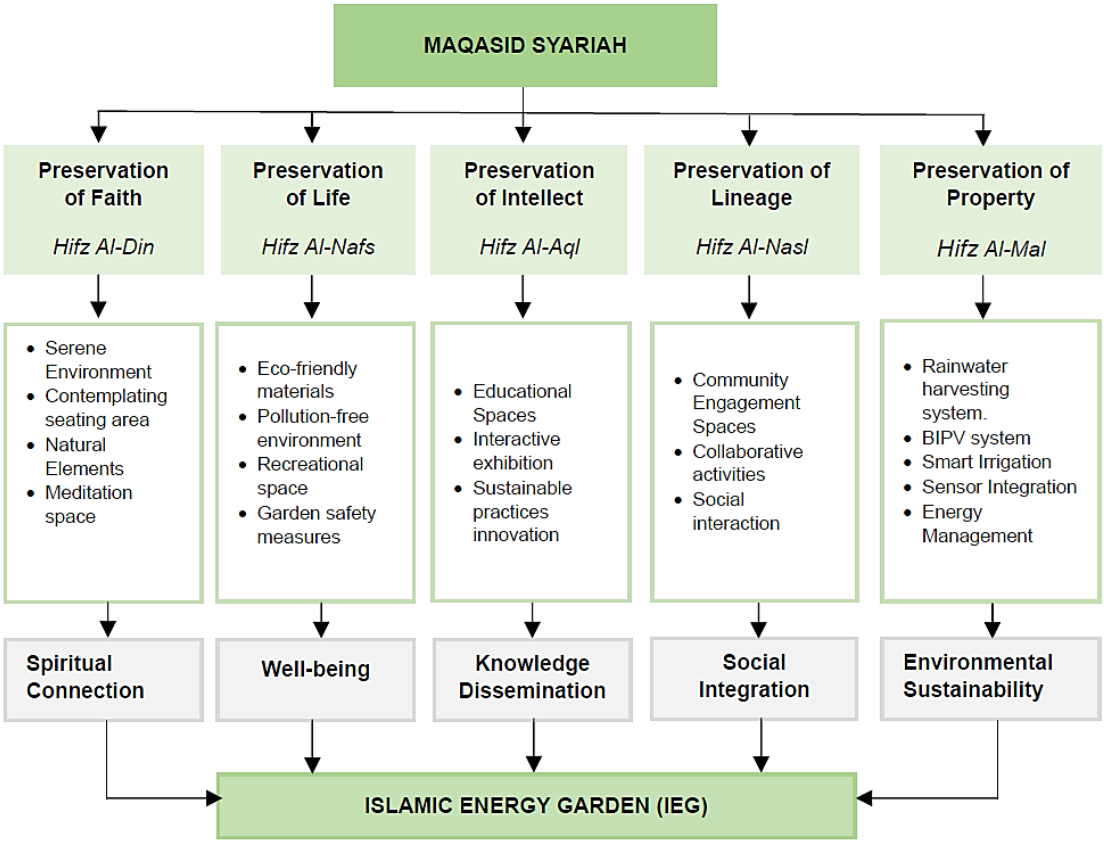

Figure 7: A preliminary IEG framework that will be further developed.
(Source: Author 2023).

Relevance of IEG framework with government policies

Overall, the integration of Maqasid Shariah with the IEG framework provides a transformative and exemplary model for implementing sustainable living on campus, fostering a culture of environmental consciousness within the campus community. The IEG framework fosters environmental consciousness by advocating sustainable practices in line with Islamic teachings, which is an essential element of nurturing a Madani society that respects and cares for the environment. This approach supports the 17 'Big Bolds' in Ekonomi MADANI: Enculturation of MADANI society as indicated in The Twelfth Malaysia Plan, 2021-2025 (Twelfth Plan), is a medium-term plan with the objective of achieving 'A Prosperous, Inclusive, Sustainable Malaysia'. (Business Today, 2023). The IEG framework promotes environmental consciousness by advocating sustainable practices in line with Islamic teachings, which is an essential element in cultivating a Madani society that respects and cares for the environment. This framework also emphasises ethical and moral principles inherent in Islamic teachings. As individuals interact with this environment, they internalise these values, contributing to their personal ethics and moral development, which are fundamental to a Madani society.

Nevertheless, based on the 10-10 Malaysian Science, Technology, Innovation, and Economic (MySTIE) Framework, the aspect most relevant to this research project is education (Academy of Science Malaysia, 2020). The IEG educational and experiential model will help nurture a creative society by exploring the intersection of Islamic teachings and sustainable practices. The experiential model will help nurture a creative society by exploring the intersection of Islamic teachings and sustainable practices. The IEG blends Islamic principles with sustainable technology, fostering innovative approaches to energy solutions. Further, this integration encourages creative thinking by merging religious values with technological advancements, inspiring individuals to explore novel ideas addressing environmental challenges.

Last but not least, the Islamic Energy Garden (IEG) framework integrates the principles of Maqasid Shariah to promote sustainable living in campus environments, aligning with key Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development (United Nations, 2016). By incorporating renewable energy technologies, the IEG promotes clean and sustainable energy generation, supporting SDG 7, which aims to ensure access to affordable, reliable, sustainable, and modern energy for all (United Nations, 2016). Furthermore, the design and implementation of the IEG significantly contribute to SDG 11, which focuses on creating sustainable cities and communities. The IEG fosters sustainable practices, energy efficiency, and green infrastructure, enhancing the overall quality of life and promoting a more sustainable built environment. This holistic approach not only aligns with Islamic values but also provides a model for integrating spirituality and sustainability within educational settings. In summary, the IEG represents a harmonious blend of environmental and spiritual principles, offering a practical framework for advancing both community well-being and sustainable development.

Impact of the Research on Society, Government and Industry

This study will also add value to the knowledge through the exploration of how Maqasid Shariah principles can inspire ethical frameworks in non-Islamic contexts, fostering cross-cultural dialogue and adaptation. This project aims to pioneer inventive teaching approaches leveraging Islamic Energy Gardens (IEGs) as live learning spaces for religious and environmental education. It is apparent that IEG framework can impact society in three aspects, which include the community's well-being, social cohesion, and educational opportunities. The IEG can promote the community well-being by providing a tranquil and inclusive space for people to connect with nature, benefiting their physical and mental well-being. It also fosters social cohesion as they serve as gathering places for individuals from diverse backgrounds, encouraging social interaction, unity, and a strong sense of community. Consequently, IEG also offers valuable educational opportunities, serving as a platform for environmental education, sustainability initiatives, and a deeper understanding of the IEG framework based on Maqasid Shariah.

Additionally, the IEG framework developed through this project can inform policymakers and decision-makers involved in urban planning, environmental regulations, and community development. It provides insights into implementing sustainable initiatives grounded in religious values, potentially influencing policies related to environmental sustainability. Interestingly, the IEG framework will offer architects, designers, and landscape professionals opportunities to integrate sustainable and eco-friendly design principles into their projects. This will influence the industry to adopt more environmentally conscious practices and raise awareness about design and planning in accordance with Maqasid Shariah. Finally, The IEG framework emphasises sustainability as a core value. As noted previously, it encourages using renewable energy sources, efficient water management, and eco-friendly practices. Conclusively, this approach reduces the carbon footprint and minimises environmental degradation.

Overall, this paper highlights the significant potential of the IEG as a transformative model for sustainable living on Malaysian campuses, rooted in Maqasid Shariah principles. Despite the lack of a specific design framework in the IEG for the Malaysian context, the IEG concept offers a unique integration of Islamic values and sustainable practices, fostering a harmonious relationship between nature, community, and faith. By addressing spiritual connection, well-being, knowledge dissemination, social integration, and environmental sustainability, the proposed IEG framework aims to cultivate a culture of environmental consciousness and sustainable living within campus environments.

Future research should focus on implementing comprehensive surveys and focus groups to assess campus users' perceptions and engagement with the IEG. Understanding how students, faculty, and staff interact with the IEG, their perceptions of its benefits, and their overall level of engagement can inform strategies to improve the user experience. Additionally, comparative studies between campuses with and without IEGs could evaluate differences in environmental consciousness, sustainable practices, and campus culture, highlighting the specific benefits and

potential challenges of the IEG model. With the continuing upward trend of achieving and maintaining sustainability, future studies should develop policy recommendations and design guidelines for implementing IEGs in diverse campus settings, ensuring these guidelines are adaptable to different contexts and align with Maqasid Shariah principles for incorporating sustainable practices.

In conclusion, this research emphasises the urgent need for a specific conceptual framework for Islamic gardens in campus environments in Malaysia, one that integrates sustainable design practices. Despite the growing interest in Islamic gardens, such a framework has yet to be developed. To ensure the successful implementation of the IEG framework on campus, it is crucial to gain full collaboration among all relevant stakeholders. Likewise, involving students, faculty, staff, and administrators in the planning and design process helps ensure that the IEG meets the needs and preferences of the campus community. Regular feedback and consultations can help align the garden's features with the users' expectations and educational goals. Besides, engaging with the local community and relevant external organisations can provide additional support and resources. It is hoped that this research outcome will to serve as exemplary model for sustainable living on campus, fostering a culture of environmental consciousness within the campus community.

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