



THE LOTUS AS A CULTURAL RESOURCE FOR SUSTAINABILITY: A CASE STUDY OF PATHUM THANI, THAILAND

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ABSTRACT

Pathum Thani Province is culturally intertwined with the lotus, a plant symbolising both economic value and spiritual identity. However, modern socio-economic changes have diminished its role, making it essential to explore the lotus' potential as a cultural resource for future sustainability. This work aims to examine the existence and management of the cultural resource of the "lotus" for sustainability in Pathum Thani Province. In this context, the lotus holds multiple roles: As a religious symbol, a cultural representation, a marker of local identity, and an economic asset for the community. This study employed a qualitative research approach using document analysis, in-depth interviews and participant observation to gain a comprehensive understanding of the management and transmission of lotus-related cultural resources within the study area. Findings reveal that the lotus exists in two main dimensions: The traditional dimension, which includes lotus farming, ritual use and its presence in literature, and the contemporary dimension, which encompasses cultural tourism, product transformation and the creative construction of community identity. The sustainable management of lotus resources consists of preserving the traditional landscape, transmitting local knowledge, developing innovative products and promoting community participation. Emphasis is placed on collaboration among the government, private sector, academic institutions and civil society through the "Four-pillar Lotus Model". This framework can be developed from the findings of this study to guide the preservation and sustainable development of local cultural resources in the modern era.

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Introduction

The lotus (Bua) flower is a globally recognised symbol of Buddhism. Its continued presence and reproduction within social and cultural spaces reflect the ways in which groups of people have long valued and conceptualised the lotus. Pathum Thani is one of Thailand's provinces renowned for its abundance of lotus flowers, as reflected in the very name of the province, which means "the city of lotus." The significance of the peri-urban province is further

emphasised by its location adjacent to the capital city, Bangkok. The province has been known as "the city of lotus" since the reign of King Rama II (Pathum Thani Province, 2022). Accordingly, Pathum Thani has adopted the lotus as its official emblem and incorporates the flower in its motto.

In Pathum Thani, the lotus is far more than just an aquatic plant of botanical value. It is also a cultural resource, shaped and sustained through processes of identity. Its meaning is sustained

through belief systems, traditions and community practices. The lotus embodies diverse functions: Religious sacredness, culinary and medicinal uses, creative applications in community products, and symbolic representations in provincial emblems, mottos and place names (Pathum Thani Province, 2022). Pathum Thani Province in central Thailand has long been recognised for its historical, religious and cultural associations with lotus-based practices

(Figure 1). This symbolic significance is institutionalised through Pathum Thani adopting the lotus as its emblem, acting as a visual marker of regional identity and cultural heritage (Figure 2). Comparable symbolic interpretations of the lotus have also been documented in other Southeast Asian cultural contexts, where the flower functions as a medium for expressing spiritual values, moral consciousness and collective identity (Azmi *et al.*, 2021).

Administrative Boundaries of Pathum Thani Province

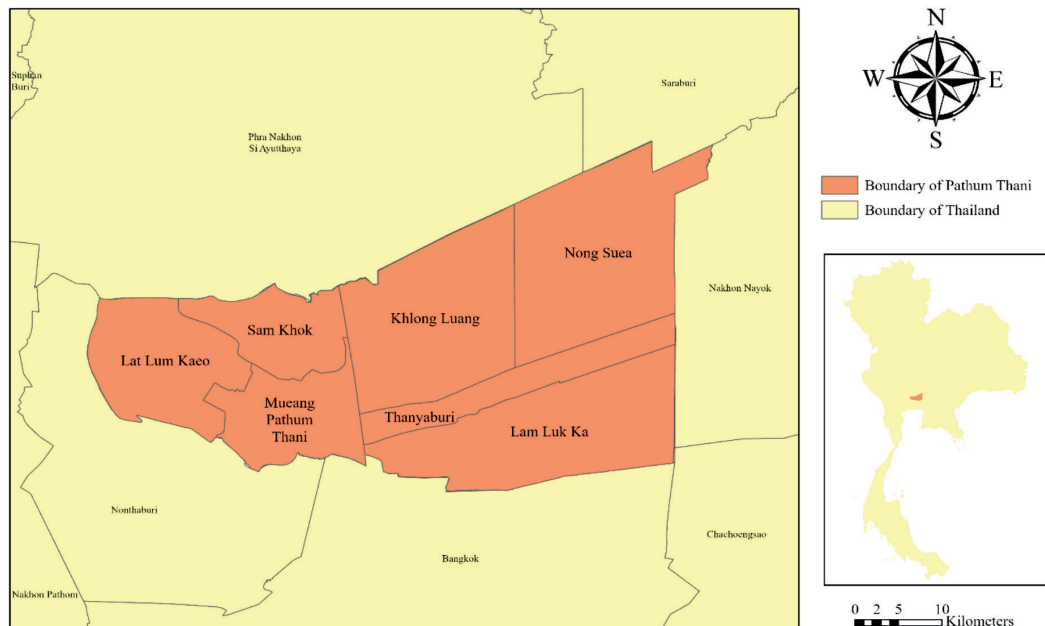


Figure 1: Location of Pathum Thani Province in central Thailand



Figure 2: The provincial emblem of Pathum Thani featuring the lotus, a symbolic representation of local identity and cultural heritage

Similarly, comparative cultural studies have demonstrated that the lotus operates as a shared symbolic code across both Eastern and Western civilisations, representing purity, rebirth, wisdom, and the cyclical relationship between nature and spirituality (Prawong, 2021). This reinforces the argument that the lotus in Pathum Thani should be understood not merely as a local emblem, but as part of a broader symbolic tradition that transcends geographical and cultural boundaries.

The presence of the lotus in everyday life is, therefore, not merely a natural phenomenon

but rather a cultural object that is managed, transmitted and given value within the socio-cultural and economic systems of the locality. The interrelationship between local identity and cultural resources allows the lotus in this context to be classified as a cultural resource with grassroots economic potential and as a form of cultural capital that can be sustainably developed under the modern framework of resource management. However, as a cultural resource, the current waves of economic, social and technological change have contributed to the lotus' diminishing role and significance. These shifts, coupled with changes in values, lifestyles and new patterns of resource utilisation, have led to the gradual fading and potential cultural loss of certain lotus-related traditions (Emerick, 2018; Vilachai, 2017). Recent interdisciplinary studies further caution that fragmented or sector-based management approaches may accelerate the erosion of both ecological and cultural values associated with lotus resources (Yang *et al.*, 2024). In Buddhist cultural contexts, the symbolic erosion of lotus-related practices has also been linked to broader transformations in ritual life and everyday religious engagement, where traditional meanings are increasingly detached from lived community practices (Sarkar, 2024).

For the presence and transmission of lotus culture to retain meaning and value for both current and future generations, the systematic and sustainable management of cultural resources has become imperative. The concept of sustainable cultural resource management emphasises community participation, the revitalisation of cultural values and the adaptation of traditions to contemporary contexts without sacrificing their original identity. It also calls for the development of supportive policy mechanisms and shared learning processes (Miksic *et al.*, 2011). While cultural resource management (CRM) emphasises the systematic protection and planning of heritage through institutional frameworks, the cultural landscape approach extends this by recognising the inseparable interaction between people and nature as a form of "living heritage", emphasising community

involvement and adaptive management (Mitchell *et al.*, 2009). Similarly, the community-based cultural heritage management (COBACHREM) approach highlights the agency of local communities as active custodians who co-create, safeguard and revitalise their heritage through shared knowledge and participation (Keitumetse, 2016).

These approaches resonate strongly with interpretations of the lotus as a living cultural symbol embedded within ritual practices, artistic expressions and collective memory, rather than as a static or purely tangible heritage asset (Prawong, 2021; Sarkar, 2024). This theoretical framework provides a useful lens for understanding how local communities in Pathum Thani engage with the lotus as both a natural and cultural heritage resource.

Recent scholarship has increasingly questioned the limitations of traditional CRM models that prioritise tangible and site-based heritage over the cultural-spiritual connections embedded within landscapes (Furlong, 2023). In Thailand, heritage management studies have largely centered on tangible assets such as temples, monuments and historical towns, while less attention has been given to natural-cultural hybrids, such as lotus resources that simultaneously perform ecological functions and convey symbolic meanings within local identity systems. The inclusion of lotus-based cultural practices, therefore, contributes to filling this scholarly gap by foregrounding symbolic, ritual and community-based dimensions of heritage that are often overlooked in conventional management frameworks (Prawong, 2021; Sarkar, 2024).

This study addresses this research gap by conceptualising the lotus as a living cultural landscape and a form of cultural capital that integrates natural, social and spiritual dimensions. By employing a CRM-based framework enhanced by principles of community participation and sustainability, the research proposes an adaptive model of cultural resource management that reflects both local identity and contemporary transformation. The

case of Pathum Thani Province, widely known as the “City of Lotus”, provides a significant example of such efforts, illustrating how communities conserve and manage lotus-related cultural resources across economic, social and spiritual dimensions.

Accordingly, this research explores the contemporary forms of lotus culture and examines strategies for sustainable cultural resource management aimed at ensuring the ongoing transmission of local resources of spiritual significance, function as cultural capital and carry social value with the potential for adaptation in other regional contexts. Based on the integration of the CRM and COBACHREM approaches, this study develops a conceptual framework to guide data collection and analysis (Figure 3). The framework demonstrates how institutional mechanisms, community participation and cultural practices are interconnected in managing the lotus as a living cultural resource, and it serves as an analytical tool for interpreting both traditional and contemporary expressions of lotus culture examined in the following sections.

Materials and Methods

Based on the conceptual framework integrating Cultural Resource Management (CRM) and Community-Based Cultural Heritage Management (COBACHREM), this study adopts a qualitative research design that emphasises community participation, cultural meaning and lived practices. To ensure coherence between the theoretical framework and the research procedures, the methodology was structured into sequential stages of data collection, analysis, synthesis and validation. The overall research process is illustrated in Figure 4.

Data Sources

As illustrated in Figure 4, this study adopts a qualitative research approach that integrates multiple data sources, including documentary materials, human participants and field-based observations. This multi-source design enables a comprehensive understanding of institutional frameworks, community practices and real-life cultural contexts related to lotus resource management in Pathum Thani Province. Data were collected from three main sources.

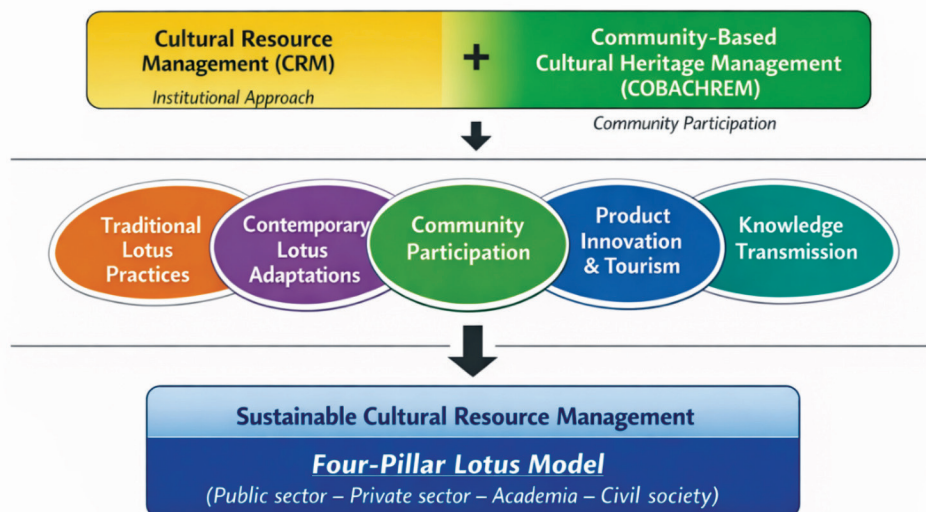


Figure 3: Integrated CRM–COBACHREM framework for lotus management in Pathum Thani Province

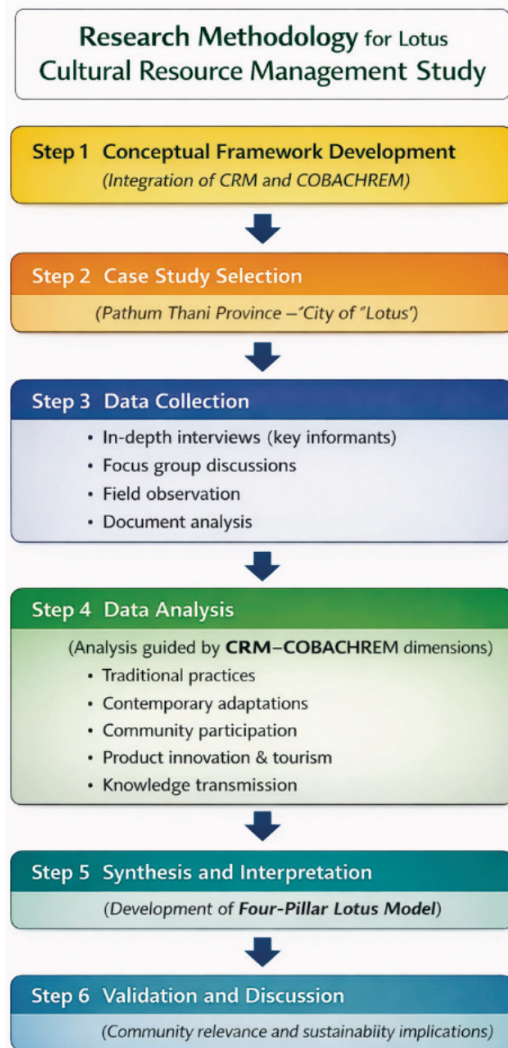


Figure 4: Research methodology based on the integrated CRM–COBACHREM framework for studying the lotus as a living cultural resource in Pathum Thani Province

Documentary materials included academic publications, government reports and cultural management documents related to lotus resource utilisation in Pathum Thani. Human participants consisted of individuals involved in lotus-related cultural activities, such as farmers, entrepreneurs, museum curators and policymakers. Field-based observations were conducted in communities, lotus farms, cultural venues and local tourism areas to capture real-

life practices and environmental contexts. Data from all three sources were analysed collectively to ensure a comprehensive understanding of the research topic.

This study covered seven districts in Pathum Thani Province: Mueang Pathum Thani, Lam Luk Ka, Khlong Luang, Thanyaburi, Lat Lum Kao, Sam Khok and Nong Suea. The research examined the lotus across diverse spatial contexts, including farming areas, lotus-based tourism sites, learning centres and lotus museums, community enterprises and OTOP producer groups utilising the lotus as a material or symbolic element, as well as government and private institutions, temples and communities where the lotus appears in place names, emblems, or sculptures, as illustrated in Figure 5.

Participants and Sampling

The research population comprised stakeholders associated with lotus-related cultural practices across Pathum Thani Province. A purposive sampling technique was used to select a total of eighteen key informants, chosen based on their experience, expertise and engagement with lotus-related activities. The sampling process began by identifying community networks and organisations involved in lotus cultivation and cultural promotion, followed by direct contact and voluntary participation. This approach ensured that diverse perspectives were represented across agricultural, economic, social and cultural dimensions, as detailed.

Research Instruments and Data Validation

The primary research instrument used in this study was a semi-structured interview. To ensure the validity of the data obtained through qualitative methodology, the study employed methodological triangulation involving multiple data-collection methods to enhance credibility.

The qualitative data were analysed using thematic content analysis, involving the identification and coding of emerging themes related to cultural, social and economic aspects of lotus resource management. Data

Fieldwork Locations in Pathum Thani Province

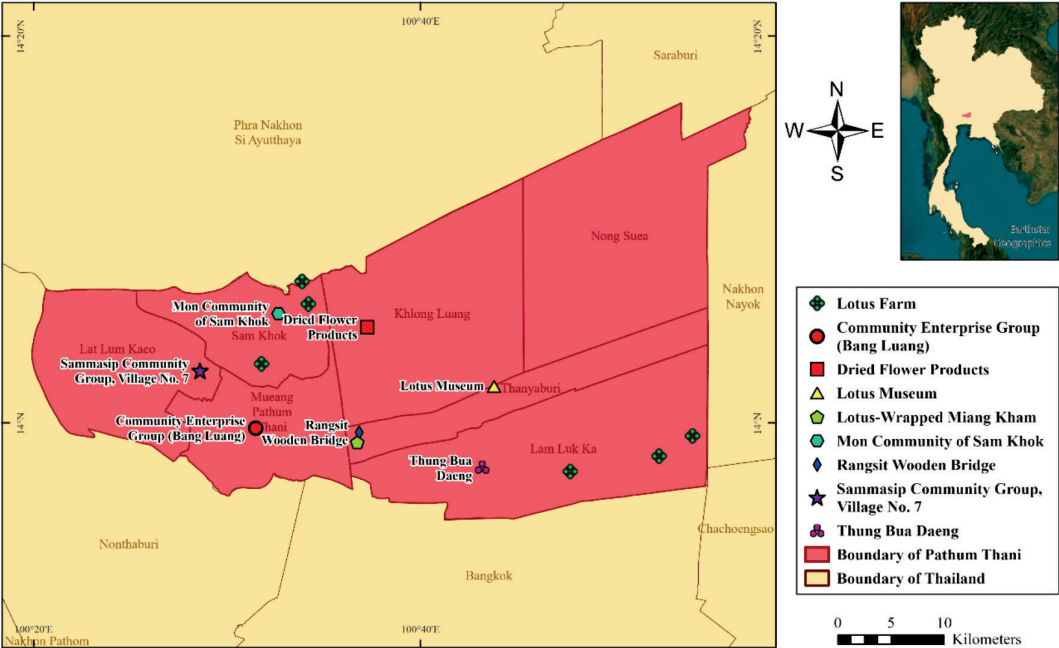


Figure 5: Fieldwork locations in Pathum Thani Province

Table 1: Key informant groups and selection criteria

Key Informant Group	Number	Selection Criteria
Lotus farmers	3	- At least five years of experience in lotus cultivation and pond management - Practical knowledge related to lotus varieties, cultivation techniques, water management and harvesting - Willingness and ability to share specific information, regarding challenges, opportunities and perspectives on lotus farming - Represents diverse localities to reflect variations in agro-ecological contexts and cultivation methods
Owners of lotus-related tourism sites	2	- Owners or direct managers of tourism sites that feature lotus-centred cultural and eco-tourism activities as their main attraction - At least three years of practical experience in managing such sites, enabling them to explain the development process and site management - Regular engagement with tourists and the local community to provide perspectives on economic and social dimensions
Administrator or curator of the lotus museum	1	- Holds a decision-making position as an administrator or curator responsible for museum operations - Has knowledge of museum management and can articulate the museum’s role in lotus conservation and cultural dissemination - Participates in academic or community-based activities related to lotus culture

Community enterprises or OTOP producers using lotus as a core product identity	7	• Produces goods using lotus as a main raw material or incorporates “lotus” as a key component of the product’s identity or branding • Operates the business continuously for at least two years to ensure the ability to explain production, marketing and sustainability processes • Certified by relevant standards e.g., OTOP, GI Represents a diverse range of communities to reflect various creative economic uses of lotus
Representatives from government agencies and relevant institutions involved in lotus production policy	5	• Holds a position in policymaking or supporting initiatives related to lotus cultivation or community cultural development • Have at least three years of experience in a relevant agency or institution • Involved in projects or measures related to conservation, development or the utilisation of lotus and community cultural heritage

from interviews, documents and observations were compared through triangulation to ensure reliability and consistency. Each in-depth interview lasted approximately 60 to 90 minutes, depending on the participant’s availability and the complexity of discussion. Both the overall and analysis process were conducted continuously between October 2021 and September 2022, with iterative reviews after each round of interviews to refine coding and verify findings (Figure 6).

Results

The Existence of the Lotus in Traditional Forms

The existence and cultural reproduction of the lotus in Pathum Thani Province indicate that it is not merely perceived as an ornamental or religiously significant plant, nor solely as a utilitarian resource. Instead, the lotus is valued as a cultural resource, embodying meanings that extend far beyond its physical form and are integral to community identity and tradition. Its continued existence and reproduction as a cultural asset reflect complex social, symbolic and identity-based dimensions. The existence of the lotus as a cultural resource within the community is manifested in seven traditional forms:

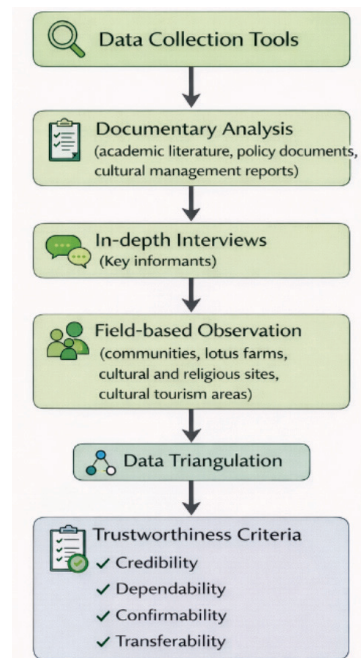


Figure 6: Summary of the research instruments and data validation process adopted in this study

Table 2 summarises the traditional forms of the lotus as a cultural resource, these manifestations are not merely conceptual classifications. They are embedded within the lived cultural landscape of Pathum Thani Province and can be empirically observed through field-based documentation.

Table 2: The existence of the lotus in traditional forms

Lotus Phenomenon	Forms of Existence
Natural lotus fields	• Emergence of lotus fields through both intentional and unintentional cultivation • Continued existence due to beliefs in ritual purity and aesthetic value
Use of lotus in rituals and religion	• Lotus flowers used as offerings in Buddhist ceremonies • The concept of the “lotus as a moral metaphor” in teaching Buddhist ethics • Evident in local rituals and traditional festivals
Lotus as a symbol of place	• Appears in the provincial emblem of Pathum Thani • Included in the province’s motto • Used in naming people and places associated with lotus identity
Use of lotus as ornamental or ceremonial flowers	• Commonly planted in homes, temples and public spaces due to its beauty and symbolic purity
Use of lotus in daily life	• Consumption of various lotus parts (seeds, stalks, roots, leaves, petals) • Used in cooking and as food ingredients
Beliefs and symbolic interpretations of the lotus	• The lotus symbolises purity, wisdom and spiritual refinement • Appears in Buddhist teachings such as the concept of “the four types of lotus”
Lotus in classical literature, folklore, and traditional arts	• Appears in epic tales such as “Nirat Phu Khao Thong” (a classic Thai poetic travel narrative) • Featured in local historical legends • Illustrated in traditional Thai art, sculpture and decorative motifs



Figure 7: Natural lotus fields
Source: Hussadin (1 August 2022)



Figure 8: Consumption of various lotus parts
Source: Hussadin (1 August 2022)

The Existence of the Lotus in Contemporary Forms

The contemporary existence of the lotus exemplifies a process of cultural reproduction that continues to preserve and transmit traditional values and practices associated with its symbolic image. These practices, drawn from past representations and observed in everyday life, have been extended and adapted to fit the present era. In modern settings, the lotus has been recontextualised and innovatively developed to align with current lifestyles and

market demands. The lotus is no longer viewed solely through the lens of ritual and tradition; it is now being leveraged as cultural capital to generate new forms of economic value. This transformation occurs through the development of modern products and services that appeal to contemporary consumers while still retaining its ties to its cultural and symbolic heritage. The contemporary forms of the lotus’ existence are manifested in six primary ways:

Table 3: The existence of the lotus in contemporary forms

Lotus Phenomenon	Forms of Existence
Cultural and agro-tourism	• Lotus farms as tourist attractions where visitors can pick lotus flowers, take photos and learn about local community practices
Development of community-based products (OTOP)	• Lotus-based products, such as lotus petal crafts, incense holders made from lotus seeds and herbal compresses or spa products using lotus leaves
Floral and event decoration market	• Cultivation of lotus flowers for sale in the fresh flower and decorative flower markets
Food and beverage products	• Processed food products derived from the lotus, such as herbal teas prepared from lotus stamens, desserts made from lotus seeds and lotus-based flour
Creative and modern design	• Use of lotus motifs in fashion, jewelry, souvenirs and lifestyle products
Museum and education initiatives	• Research and development of lotus varieties • Educational programmes and exhibitions on the cultural significance of the lotus in Thai society

In parallel, the contemporary forms of lotus existence, as presented in Table 3, are reflected in dynamic and adaptive cultural landscapes shaped by modern socio-economic conditions (Figure 9 and 10). These transformations reveal how traditional lotus symbolism has been reinterpreted and mobilised as cultural capital in response to tourism, creative industries and community-based economic development.

In Thailand, the lotus is a cultural symbol in several provinces, including Ubon Ratchathani, Nong Bua Lamphu and Roi Et. Although these provinces share lotus-related landscapes and practices, patterns of cultural transmission and

reproduction vary across historical, spatial and socio-economic contexts. To situate the contemporary reproduction of the lotus in Pathum Thani, Table 4 presents a comparative analysis of these provinces.

Comparative Perspectives of Key Informant Groups

To further clarify how different stakeholder groups perceive and engage with the lotus as a cultural resource, the interview findings were synthesised and comparatively analysed across key informant groups, as identified in Table 5.



Figures 9: Development of community-based products (OTOP)
Source: Hussadin (1 August 2022)



Figures 10: Lotus-based products
Source: Hussadin (1 August 2022)

Table 4: Comparative modes of cultural transmission and reproduction of the lotus in selected Thai provinces

Province	Dominant Mode of Cultural Transmission	Key Characteristics of Lotus Reproduction	Distinctive Features
Ubon Ratchathani	Ritual- and festival-based transmission	Reproduced through Buddhist rituals, ceremonies and seasonal festivals linked to agrarian life	Emphasis on collective memory, spiritual continuity and ritual landscapes
Roi Et	Agrarian–ritual continuity	Sustained through farming practices and community rituals supporting rural livelihoods	Strong linkage to agricultural cycles and community religious practices
Nong Bua Lamphu	Place-based symbolic transmission	Functions as a cultural marker embedded in local beliefs, oral traditions and provincial identity	Emphasis on symbolic meaning and vernacular knowledge rather than innovation
Pathum Thani	Adaptive multi-sectoral reproduction in a peri-urban context	Mobilised as cultural capital across agro-cultural tourism, creative industries, community enterprises and education	Integration of tradition and innovation supporting sustainable livelihoods

Table 5: Summary of key interview themes by informant group

Informant Group	Shared Perspectives	Distinct Perspectives
Lotus farmers	Lotus as livelihood and tradition	Concern about water, urban expansion
OTOP/community enterprises	Lotus as cultural identity	Focus on product innovation and markets
Tourism site owners	Lotus as attraction and learning	Emphasis on visitor experience
Museum curator	Lotus as knowledge heritage	Education & intergenerational transfer
Government agencies	Lotus as policy resource	Sustainability planning and regulation

Interview findings show shared recognition of the lotus as a key cultural asset, alongside differing stakeholder priorities related to sustainability, innovation, tourism, education and policy, which together support its integrated management as a living cultural resource.

Cultural Resource Management for Sustainability

The management of lotus as a cultural resource for sustainability reveals a collaborative effort between communities, government agencies and private-sector stakeholders. The goal is to create a framework for managing lotus-related cultural resources based on the principles

of community sustainability. Central to this approach is community participation, which recognises local people as both custodians and inheritors of lotus culture. Their involvement

ensures that the cultural significance of the lotus can be preserved while adapting to modern contexts. The emphasis is on maintaining traditional values and encouraging innovation within contemporary frameworks. As a result, the lotus continues to be meaningful socially, culturally and economically. At the same time, it provides ongoing benefits to the community.

Key approaches to sustainable lotus resource management identified in the study are compiled in Table 6.

Table 6: Cultural resource management approaches for sustainable lotus conservation

Key Issues	Objectives	Activities/Implementation Strategies
1. Conservation and restoration of traditional lotus habitats	To preserve traditional lotus habitats and their ecological diversity	• Survey and restore natural lotus habitats • Implement organic farming practices
2. Transmission and reproduction of knowledge and beliefs	To sustain local meanings and cultural values associated with the lotus	• Produce educational materials on lotus and its uses across various dimensions • Promote learning through community activities and school-based programmes • Organise exhibitions and museum-based educational initiatives
3. Product development and innovation from lotus	To increase economic value and promote identity-based products	• Process lotus into food, beverages and souvenirs • Design innovative products using lotus as a symbolic and functional resource
4. Integration with cultural tourism	To create cultural tourism experiences and promote cultural dissemination	• Develop lotus sites as learning-based tourism destinations • Organise annual lotus festivals
5. Community participation models	To empower communities in leading development and value-creation processes	• Establish local committees for collaborative management • Strengthen networks among government, private and local stakeholders

Discussions

The Existence of the Lotus in Traditional Forms

The traditional presence of the lotus constitutes a process of cultural reproduction, encompassing values and practices that have been passed down across generations. These traditions embody a collective memory of the lotus that extends beyond its botanical or aesthetic qualities. Its endurance and reproduction in daily life demonstrate the deep integration of the lotus into Thai ways of life. The lotus carries both symbolic meaning and practical utility within social consciousness.

This traditional reproduction reflects a broader process of cultural continuity, through which socially accepted practices, beliefs, values and worldviews are perpetuated. It encompasses the entire cultural cycle: Production, dissemination, consumption and reproduction, where key agents include social institutions

such as the family, education system, political bodies, religion and community organisations. These institutions serve as both producers and reproducers of cultural value, transmitting ideas and practices to future generations, and disseminating them across accepting social groups, thereby shaping the cultural signature of a given era.

Cultural reproduction functions as a mechanism for preserving and sustaining societal ways of life, grounded in shared values, beliefs and appropriate practices that members of society have selectively maintained (Bunvong, 2020). In the case of the lotus, its reproduction in traditional religious contexts as a flower offered in Buddhist worship reflects its enduring spiritual significance. Buddhists regard the lotus as a symbol of beauty, purity, enlightenment and

spiritual wisdom. Thus, it is commonly used in rituals and devotional practices (Kandeler & Ullrich, 2009). The lotus' natural growth rising from muddy waters, yet remaining unstained, parallels Buddhist teachings on the potential of spiritual elevation despite worldly suffering. This belief is deeply rooted in Thai Buddhist culture and is visibly expressed in multiple branches of Thai artistic and cultural heritage, including literature, architecture, sculpture and painting (Monsintorn, 2005; Huang, 2020). Research by Chaodee and Taychasinpitak (2002) further supports the religious use of the lotus. Their study of traditional floral offerings in Lanna ceremonies, based in Chiang Mai Province, found that lotus flowers appeared in offerings for three of thirteen major annual rituals: Songkran (Thai New Year), weddings and the traditional New Year festival. This reflects the lotus' long-standing symbolic role in Buddhist worship not only as a decorative flower but also as a cultural and literary motif. The lotus continues to hold profound spiritual and aesthetic value, tightly interwoven with Buddhist belief systems. This influence is deeply embedded in Thai social practices and is also observed in other cultural contexts, such as in Malay societies (Azmi *et al.*, 2021).

The Existence of the Lotus in Contemporary Forms

The continued reproduction of the lotus amid changing societal conditions underscores the need for adaptive strategies to ensure its sustainable existence. Transforming traditional lotus farms into cultural and agro-tourism destinations represents a modern adaptation. Such lotus-centered tourist attractions are closely tied to preserving the lotus as a cultural identity of Pathum Thani Province. As lotus farming areas decline, repurposing them into tourism sites helps safeguard the essence of the past while adapting to present realities. These sites, both privately and publicly developed, do not merely promote tourism but also maintain a blend of traditional and contemporary cultural elements. A further form of cultural adaptation is the reinterpretation of traditional lotus-based

foods into contemporary formats that retain their heritage roots. A notable example is Miang Kleep Bua (lotus petal-wrapped snacks), a creative use of lotus petals in modern Thai cuisine. Moreover, the enduring symbolic importance of the lotus in Thai Buddhist culture influences the way families grow lotuses around their homes. It is believed that the lotus, as a symbol of purity in Buddhism, brings cleanliness, spiritual clarity and unity. The lotus stem's length is often seen as a metaphor for strong familial bonds (Suksai, 2019).

Concurrently, lotus-based products have generated significant economic opportunities for communities. In Pathum Thani, community members have developed local OTOP products that incorporate lotus motifs and materials through contemporary design and creativity, including lotus-shaped clay flowers and Sabai Mon shawls featuring lotus patterns. Such initiatives strengthen community identity and contribute to the sustainability of the local community. This trend corresponds with Chalermsoen's (2015) study of the tourism potential of Talay Bua Daeng (Red Lotus Sea) in Ban Diem community, Chiang Klang Subdistrict, Phu Miang District, Udon Thani. The study found that the area's natural and cultural attributes attract tourists, thereby reinforcing the link between ecological preservation and economic development. This outcome is supported by the work of Numbery *et al.* (2018), which analysed the symbolic cultural spaces of the Silimo people within the Dani cultural structure in the Baliem Valley, Jayawijaya. Their study found that community-driven reinterpretations of tradition such as redefining guesthouses (pilamo) as symbols of male power and development, reimagining silimo houses as modern "stone dwellings" designated for male activities, serve as strategies to maintain resource control and ensure social continuity.

Simultaneously, women's identities are preserved through symbols like Pondok Cendramata, illustrating how cultural reproduction and sustainability are shaped

and selected by members of society. The establishment of the Lotus Museum as a space for public knowledge sharing and research development in Pathum Thani about lotus culture in Thai society further strengthens its contemporary role. In this regard, intergenerational learning and communication are crucial for the transmission of cultural heritage. The museum serves as a key platform for facilitating this dialogue (Sriphan, 2012). In addition to cultural functions, the lotus also presents considerable commercial opportunities. The expansion of lotus cultivation for the ornamental plant market is a notable example. Liu *et al.* (2017) noted that *Nelumbo nucifera* (sacred lotus) holds significant commercial potential. In particular, large-flowered and rare-colored varieties like “Zijin Chuoying” are popular in landscape and garden design. Currently, more than 800 different varieties of the lotus plant have been developed and propagated in China to meet growing market demand. Cultivation in colder climates is made possible through greenhouse systems. Related businesses, such as lotus seedling nurseries, potted lotus plants and lotus-themed tourist gardens, are thriving enterprises.

Cultural Resource Management for Sustainability

The sustainable management of the lotus as a cultural resource highlights the importance of both conserving and utilising heritage to safeguard the cultural legacy of societies, communities and local groups. Cultural resources are inherently valuable and once damaged or lost, they are often irreplaceable. Moreover, they hold deep emotional and spiritual significance for cultural bearers (Cruz, 2024). In this study, the management process begins with inclusive community participation, emphasising the active involvement of local residents in all stages of cultural resource management. Community members engage in developing products that feature the lotus as a symbolic or material element, thereby reinforcing its role as an identity marker of Pathum Thani Province.

Furthermore, lotus farms have been developed into cultural and agro-tourism destinations, where private entrepreneurs collaborate with local government agencies and other private-sector actors to promote both cultural tourism and agricultural sustainability. Residents organise cultural activities that reflect the lotus identity of the province through cooperation between public and private sectors. Previous research by Anontachai *et al.* (2025) supports the significance of community and local government participation in lotus cultural management, emphasising the role of local administrative organisations in managing cultural capital and fostering community involvement for sustainable development.

Academic institutions, particularly local and regional universities, also serve as important knowledge hubs that transmit expertise to communities. Such collaborations contribute to the development of tourism sites and products that reflect local identity while ensuring sustainable resource use. Collectively, these multi-sectoral efforts underpin the Four-Pillar Lotus Model for sustainable local cultural resource management, which comprises the public sector, the private sector, civil society and the academic sector. The model provides a sustainable response to the dynamic shifts of modern society and aligns with Keitumetse’s (2016). COBACHREM model, which emphasises community participation as a core principle of sustainable heritage management. This perspective asserts that cultural values are embedded in everyday community life and that local participation is essential for effective and sustainable cultural conservation.

Comparable findings have been reported in other cultural contexts. Lekakis *et al.* (2018) report that community participation in post-disaster cultural heritage restoration in the Kathmandu Valley, Nepal, leads to sustainable and community-rooted outcomes when traditional practices are combined with modern management mechanisms. Li (2024) further illustrates that the integration of technology with community engagement strengthens the

revitalisation of traditional cultural villages. Within such frameworks, innovation and participation reinforce local cultural resilience. In the context of lotus conservation, Gowthami *et al.* (2021) propose an Integrated Genetic Conservation Model, arguing that conservation should extend beyond breeding plots to encompass community-based participation supported by national policies. Similarly, Piriyaachagul *et al.* (2020) show that community knowledge and local wisdom in managing Miang (fermented tea) resources, through systematic design rooted in intergenerational learning, form a participatory cultural system that embodies sustainable cultural resource management and promotes environmental harmony.

Empirical data show that cultural resource-based knowledge provides a strategic foundation for sustainable urban development. Conserving lotus resources is, therefore, essential for cultural identity, ecological balance, livelihoods and adaptive capacity in rapidly urbanising contexts. These lessons from Pathum Thani demonstrate

their applicability to other urban settings (Figure 11).

In Figure 11, lessons from the Pathum Thani case are translated into a transferable framework for sustainable urban development by framing the lotus as a living cultural resource and operationalising collaboration through the Four-Pillar Lotus Model. It emphasises that the model's transferability lies in its conceptual structure and collaborative governance.

Implications for Sustainable Urban Development

Lessons from Pathum Thani illustrate how cultural resources can be repositioned as living assets that bridge tradition and innovation. This study contributes to the academic discourse on cultural sustainability by demonstrating an adaptive, community-based model that can be transferred to other cities facing similar challenges of urban expansion and cultural transformation.



Figure 11: Lessons from Pathum Thani to global cities developed by the author using AI-assisted visualisation tools



Figure 12: Conceptual illustration of the Four-Pillar Lotus Model developed by the author using AI-assisted visualisation tools

Conclusions

The lotus (Bua) in Pathum Thani Province, Thailand, constitutes a key cultural asset with religious, social, economic and identity significance. This study examined the reproduction of lotus related traditions to inform sustainable management within contemporary communities. Findings show that the lotus persists in traditional forms, including farming, rituals and symbolic identity, while contemporary adaptations encompass cultural and agro-tourism initiatives, lotus-based products, fashion motifs and lotus museums. These developments demonstrate the potential for harmonising cultural preservation with modern relevance. The research also highlights the vulnerability of lotus heritage to urban expansion and changing societal values. Effective conservation and sustainable development, therefore, demand coordinated, multi-sectoral strategies to safeguard the lotus as a living cultural resource, ensuring its enduring significance and meaningfulness for future generations.

Author's Contribution

Areewan Hussadin carried out the research, wrote and revised the article. Somporn Turee anchored the review, revisions and approved the article submission. Panida Thansin proofread the manuscript and checked the completeness of the article.

Ethical Conduct

Procedures in this study were approved by the Ethics Committee of Rajamangala University Thanyaburi through EXP 29/65, 20 June 2022.

Declaration of AI-Usage

AI was used for initial grammar checking, followed by final language review by a native English speaker to ensure overall linguistic accuracy. AI was also employed as a tool to assist in the design of conceptual illustrations for the manuscript.

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Conflict of Interest Statement

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declare absence of conflicting interests with the funders.

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