

CONSTRUCTING A WELLNESS TOURISM VALUE CHAIN BASED ON THE MEDICINAL HERB ECOSYSTEM IN THE BAY NUI REGION, AN GIANG PROVINCE

Tran Trong Le

Ho Chi Minh City University of Industry and Trade

Email: Trantronglek8@gmail.com

Received: 3 April 2026; Revised: 28 April 2026; Accepted: 7 May 2026

ABSTRACT

Driven by the globally surging wellness economy, wellness tourism has emerged as a core catalyst for green growth and human resilience. The Bay Nui region possesses a distinct competitive advantage for this sector, underpinned by its endemic medicinal herb ecosystem and profound traditional medicine heritage. However, theoretically, integrating ecological knowledge and indigenous medicine into the service supply chain remains a significant research gap. Empirically, these medicinal resources are sub-optimally utilized due to disconnected linkages between agricultural cultivation and tourism services. This study aims to construct a comprehensive wellness tourism value chain for the Bay Nui region. Employing a qualitative approach (field surveys, in-depth interviews, thematic analysis, system-structural analysis), the research identifies core supply bottlenecks across stakeholders - travel enterprises, farmers, traditional healers, and authorities. The paper consequently proposes a Quadruple Helix framework to optimize the value chain, smoothly transitioning herbs from cultivation to experience design. Ultimately, this integration shapes high-quality wellness experiences, preserves biodiversity, and sustains local livelihoods.

Keywords: Wellness tourism, tourism value chain, medicinal herb ecosystem, Bay Nui region, An Giang.

1. INTRODUCTION

In the context of the strongly emerging global wellness economy, wellness tourism is gradually asserting its role as a core driver for green growth strategies and enhancing human resilience [1], [2]. Changing trends in tourist behavior have motivated destinations to position their competitive advantages by integrating natural ecosystems and indigenous medical knowledge. However, from the perspective of tourism value chain theory, current studies have not elucidated the integration of ecological knowledge and traditional medicine into the experiential supply chain [3]. In Vietnam, the Bay Nui (Seven Mountains) region in An Giang province features a specific semi-mountainous terrain, a unique microclimate, and diverse flora and fauna across its 955.3 km² area, encompassing the administrative territories of Tinh Bien, Thoi Son, and Chi Lang wards, as well as Ba Chuc, Co To, Tri Ton, Nui Cam, O Lam, An Cu, and Vinh Gia communes [4]. This region possesses distinctive eco-cultural advantages, highlighted by an endemic medicinal ecosystem and a long-standing folk medicine tradition enriched by the cultural convergence of the Viet - Hoa - Khmer communities. Nevertheless, these medicinal resources remain inefficiently exploited due to disrupted value chain linkages, particularly the merely formal connections within the Quadruple Helix model: State - Scientist - Farmer - Enterprise. Consequently, 2025 data from the An Giang Department of Tourism indicates that over 70% of visitors currently

engage only in seasonal pilgrimages, characterized by short stays and low expenditure. Furthermore, the orally transmitted medical knowledge of indigenous communities faces extinction, necessitating a transition to sustainable livelihood models within an integrated tourism ecosystem.

Previous studies often separate the economic dimensions of tourism value chains from the ecological aspects of medicinal herbs. Addressing this theoretical gap, this study offers two key contributions. First, it advances the wellness tourism value chain by proposing a framework that explicitly links upstream medicinal cultivation with downstream experiential design. Second, it enriches the Quadruple Helix model by positioning the local community as the vital bridge between ecological capital and commercial wellness services in heritage-rich settings. Therefore, this study aims to construct a comprehensive wellness tourism value chain based on the medicinal herb ecosystem in the Bay Nui region. The paper focuses on three objectives: (1) Assessing the potential of the Bay Nui medicinal ecosystem for wellness tourism development; (2) Analyzing the current operations of the tourism value chain to identify bottlenecks hindering the linkage between medicinal agriculture and travel services; (3) Proposing a model to construct a wellness tourism supply chain involving stakeholders, from cultivation and processing to experience design. The findings contribute to systematizing the theoretical framework of the wellness tourism value chain and proposing practical solutions to ensure sustainable community livelihoods and biodiversity conservation in the Bay Nui region.

2. THEORETICAL BACKGROUND

2.1. Overview of wellness tourism

2.1.1. Concept of wellness

According to the Global Wellness Institute, wellness is "the active pursuit of activities, choices and lifestyles that lead to a state of holistic health." Unlike the traditional medical system, which is often reactive (treating illness after it occurs), "wellness" is proactive and multidimensional, encompassing physical, mental, emotional, spiritual, and environmental aspects [5], [2]. According to the Constitution of the World Health Organization, health is defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" [6].

Table 1. Differences between health/medical & wellness in the tourism context

Criteria	Health/medical	Wellness
Medical reference	Disease treatment	Healing, prevention
Motivation	Reactive	Proactive
Tourism services	Surgery, dentistry, screening, organ transplant	Yoga, meditation, spa, detox, trekking, vegetarian diet
Customer role	Patient (Receiving treatment)	Tourist (Participating in experiences)
Expected outcome	Curing disease, functional rehabilitation	Balancing Body - Mind - Spirit, energy regeneration
Dimensions	Three dimensions: Physical, mental, social	Multidimensional: Physical, mental, social, emotional, spiritual, environmental, occupational

Source: Compiled from [1], [2], [5], [6].

2.1.2. Definition of wellness tourism

The concept of wellness tourism is viewed from various academic and practical perspectives. At a macro level, the Global Wellness Institute defines wellness tourism as "travel associated with the pursuit of maintaining or enhancing one's personal wellbeing" [1]. Based on the nature of experience structure, the Wellness Tourism Association (WTA) posits that wellness tourism encompasses "travel that allows the traveler to maintain, enhance or kick-start a healthy lifestyle, and support or increase one's sense of wellbeing". This approach is particularly suitable for designing therapeutic products derived from natural medicinal ecosystems. To realize these multidimensional experiences, this study agrees with Thal's systemic view [7]. From a supply-demand perspective, Thal [7] defines wellness tourism not only as an individual motive but also as "a segment of the global tourism industry catering to the wellness traveler." Unlike medical tourism, which focuses on physical medical interventions, wellness tourism adopts a preventive and lifestyle-oriented approach.

2.1.3. Experience typologies and wellness tourist segments

Diverse tourist motivations have shaped various experience typologies within the wellness tourism ecosystem. According to Smith and Puczkó [8] and Thal [7], popular typologies include wellbeing tourism, yoga tourism, spa tourism, transformative tourism, and spiritual tourism. This study approaches these forms through a holistic wellness model, where a wellness tourism experience aims to foster holistic integration among three pillars: Body (physical health through nutrition and therapy), Mind (mental clarity and stress relief), and Spirit (deep connection with self and nature). From the perspective of nature connection, herbal tourism is emerging as a promising niche market within wellness tourism. This form utilizes indigenous medicinal herbs and traditional medical knowledge as core resources to create therapeutic experiences. However, commercializing herbal tourism in developing countries faces supply chain management barriers, especially strict standardization and traceability requirements (such as GACP-WHO or EU Directive 2001/83/EC) to reinforce market confidence in safety and therapeutic quality.

Addressing these barriers requires destinations to identify the right target customer segments. According to GWI [9], the wellness tourism market is divided into two main groups based on core motivations:

- Primary wellness tourists: Travelers whose primary and sole purpose for the trip is wellness. This group typically seeks specialized and isolated services such as destination spas, therapeutic hot spring resorts, or yoga retreats.
- Secondary wellness tourists: Travelers whose primary trip purpose is different (e.g., business, leisure, or pilgrimage) but who seek to integrate wellness experiences into their itinerary (e.g., choosing healthy dining options or using local herbal bath services).

2.2. Medicinal herb ecosystem and indigenous medical knowledge in tourism

The medicinal herb ecosystem is not limited to the biodiversity of natural vegetation but also encompasses the socio-ecological system through indigenous knowledge in traditional cultivation, harvesting, and processing techniques [10]. From the perspective of the wellness tourism value chain, herbs must be transformed into a specific experiential resource and integrated into the tourism service system, allowing tourists to directly access profound folk knowledge and supporting the community in conserving herbal genetic resources.

2.3. Theory of wellness tourism value chain

Inheriting Porter's model [11], the tourism value chain is defined as a complex supply network requiring multi-stakeholder coordination to create comprehensive experiences. Contextualized within the medicinal herb ecosystem, this study operationalizes the tourism

value chain into three core supply subsystems: (1) Inputs: Ecological planning and preservation of indigenous medical knowledge; (2) Operations: Community directly transforming cultivation and preparation practices into therapeutic experiences; (3) Design and Distribution: Travel enterprises leveraging resources into specialized tourism products. To complement the supply perspective, the value chain is analyzed using the tourist journey approach [12], [13] with three stages: preparation and access; core experiences (eco-lodging, functional ethnobotanical nutrition, therapy); and post-trip healing maintenance. Additionally, the Quadruple-Helix Model is applied to clarify the synergistic roles of four actors: Government (institutional creation, regional planning, GACP-WHO standardization); Scientists (providing academic foundations, clinical validation); Enterprises (infrastructure investment, service commercialization); and Community (direct cultivation, preservation, and transfer of indigenous knowledge) [14].

3. METHODOLOGY

Objective - participant observation method: The author conducted field trips and surveys at various destinations (02/2026), including the under-canopy medicinal herb cultivation model near Hang Pagoda at the foot of Co To Mountain (To Mountain), the medicinal conservation area within Lam Vien Nui Cam tourist area, medicinal gardens of traditional healer Thien Chung and Ut Thanh's family, the Hoa Hao Buddhist herbal medicine room on Cam Mountain, several local herbal foragers, traditional medicine rooms, and tourism services in the areas of Dai Mountain, Ket Mountain, Dai 5 Gieng Mountain, Tuong Mountain, and Nuoc Mountain. Observations were also made at medicinal trading facilities in Tinh Bien ward, Lam Vien restaurant & hotel, Cam Mountain tourist area, Tra Su melaleuca forest, and homestays (Nha Cua May, Mai Tung House) to document local herbs and evaluate the medicinal ecosystem serving tourist experiences across the Bay Nui tourism value chain.

In-depth interview method and participant selection: A purposive sampling technique was employed to select 12 key informants who are deeply involved in the local herbal and tourism sectors. The selection criteria required participants to have at least five years of practical experience in their respective fields within the Bay Nui region to ensure data reliability and depth. The participants included 2 traditional healers (extensive knowledge of indigenous medicine), 2 local herb-farming household representatives, 2 group leaders of local herbal foragers, 2 managers from the Cam Mountain Tourist Area and Lam Vien resort, 2 homestay owners, and 2 directors of travel agencies.

The qualitative data obtained from interviews and participant observations were analyzed using thematic analysis. The process involved three rigorous steps: (1) transcribing all interview recordings and organizing field notes; (2) open coding the data to identify initial concepts related to resource exploitation, processing barriers, and service integration; and (3) grouping these codes into core themes that reflect the subsystems of the wellness tourism value chain. To ensure academic rigor, evidence from transcripts was triangulated with secondary documents, such as the An Giang Tourism Department's reports.

Table 2. Profile of Interviewees

Code	Gender	Role / Occupation	Years of Experience
H1	Male	Traditional healer (Indigenous Medicine)	26
H2	Male	Traditional healer (Indigenous Medicine)	24
F1	Male	Local herb-farming household representative	17
F2	Female	Local herb-farming household representative	15

FL1	Male	Group leader of local herbal foragers	13
FL2	Male	Group leader of local herbal foragers	12
M1	Male	Manager (Cam Mountain Tourist Area)	14
M2	Female	Manager (Lam Vien resort)	10
HO1	Female	Homestay owner	6
HO2	Male	Homestay owner	5
TA1	Male	Director of Travel Agency	20
TA2	Male	Director of Travel Agency	16

Source: Compiled by the author.

System-structural analysis method: This was applied to examine how the Bay Nui medicinal ecosystem is exploited within the wellness tourism value chain by stakeholders (tourism enterprises, state tourism management agencies, local residents, and tourists). This helps identify barriers in the wellness tourism supply chain, improve product quality, and diversify offerings to meet contemporary tourist demands.

4. RESULTS AND DISCUSSION

4.1. Potential for wellness tourism development from the medicinal herb ecosystem in the Bay Nui region

From the perspective of tourism value chain theory, the Bay Nui (Seven Mountains) region converges natural and cultural advantages to form supply links for wellness tourism. Based on the holistic wellness approach, this specific comparative advantage is shaped by components such as endemic biodiversity (natural capital) and the indigenous medical heritage value system (cultural capital) [2].

First, natural capital and the medicinal herb ecosystem create a foundation for physical therapy.

According to secondary data analysis and field survey results, the Bay Nui region features a multi-tiered natural forest complex (approx. 21,000 ha) with a specific semi-mountainous microclimate. This ecological condition has created one of the richest botanical genetic repositories in the Mekong Delta. Botanical statistics record the presence of 815 vascular plant species, of which 680 (83.4%) contain clinically applicable bioactive compounds. Regarding resource reserves, the Bay Nui medicinal list records 226 essential medicinal species across 79 different plant families. Taxonomically, the Magnoliophyta division dominates with 216 species (95.58%), notably the Fabaceae family. In terms of morphological structure, woody and shrubby plants account for the highest proportion, up to 68% [14]. This abundant flora provides a perfect fundamental material source for physical therapies, highlighted by endemic miracles like *Hydnophytum formicarum*, *Stephania glabra*, and particularly *Citrus hystrix*, which has an extremely high antibacterial essential oil content.

Second, cultural capital and traditional medical heritage create a foundation for mind-spirit therapy.

The Bay Nui region is also a space of cultural convergence in herbal practices among the Viet - Hoa - Khmer communities. Experts note that indigenous knowledge is demonstrated through the flexible application of local medicinal resources, such as combining Khmer practical healing experiences with the systematic traditional medical theory of the Hoa people. For example, local healers use wild *Oroxylum indicum* bark (locally called Nam huynh ba) to replace the northern *Phellodendron amurense* (Hoang ba). This ensures treatment efficacy while adhering to the Four Natures - Five Flavors philosophy in medical theory.

Regarding human-environment relations, the healing tradition in Bay Nui is established and maintained through two unique conservation methods:

Attaching religious elements to medicinal plants: Deifying "ngai" species (Zingiberaceae family) is essentially a traditional nature conservation method. It creates psychological barriers within the community to preserve precious herbal varieties and protect them from over-exploitation.

Linking healing with moral cultivation: This philosophy is materialized through a network of free herbal medicine clinics operated by the Pure Land Home-Practice Buddhist Association of Vietnam. Combining faith with free medicine distribution has transformed temple grounds into ecological herbal conservation gardens and essential preventive health stations for locals.

The close connection between nature and culture has created the core characteristic value of Bay Nui. This is a crucial foundation helping stakeholders build a tourism value chain, promoting the transition from selling unprocessed herbs to designing multidimensional wellness tourism products aimed at holistic balance: Body - Mind - Spirit [2].

Table 3. Selected Bay Nui medicinal herbs integrated into tourism

Medicinal Herb	Pharmacology (Traditional & Modern Medicine)	Integration into Tourism Value Chain
Trái chúc (<i>Citrus hystrix</i>)	Antibacterial, digestive stimulant, deodorizing (high essential oil).	Macrobiotic cuisine; aromatherapy in spas/retreats.
Cây xạ đen (<i>Celastrus hindsii</i>)	Antioxidant, liver detox, sedative, tumor inhibition support.	OCOP products (detox tea); functional drinks at lodgings.
Ba kích & dó bầu (<i>Morinda officinalis</i> & <i>Aquilaria</i>)	Vitality enhancement, blood circulation, debility recovery.	Herbal bath therapy; heritage medicinal wine (premium gifts).
Đinh lăng, nho rừng (<i>Polyscias fruticosa</i> , <i>Vitis heyneana</i>)	Immune boost, anti-aging, muscle recovery (rich in Saponins).	Medicinal culinary dishes; organic cosmetic extracts.
Linh chi, ngải đen, sâm Thất Sơn (<i>Ganoderma</i> , Black ginger, Seven Mountains ginseng)	Broad-spectrum anti-inflammatory, metabolic regulation.	Packaged pharmaceuticals; health supplements (export-oriented).

Source: Compiled from field survey results

4.2. Current status and barriers in the wellness tourism value chain

4.2.1. Risks of ecological depletion and barriers to material standardization

The input supply subsystem of the value chain currently faces severe resource depletion due to livelihood pressures. Thematic analysis from interviews reveals that around 90% of the herbal yield still originates from natural exploitation. A local herbal forager group leader (FL1) admitted that destructive harvesting methods, such as uprooting and bark stripping, are strictly utilized for daily survival. Consequently, ecological degradation is evident; traditional healers (H1, H2) confirmed that at least 15 important herbal species have completely disappeared from the wild, and 6 flora and fauna species in Bay Nui are listed for strict protection in the Vietnam Red Data Book [15].

Furthermore, this raw exploitation disrupts the commercialization phase. Directors of travel agencies (TA1, TA2) emphasized that local herbs circulated through spontaneous trading channels lack traceability and fail to meet international quality standards like GACP-WHO. This lack of transparency significantly diminishes the willingness to pay among high-

spending customers, who tend to view these materials merely as ordinary agricultural commodities rather than verified therapeutic elements (TA2).

4.2.2. Processing technology limitations and input quality degradation

Disruptions in the Bay Nui wellness tourism value chain are most evident during the preliminary processing phase. Local herb-farming households (F1, F2) indicated that due to financial constraints, their processing relies entirely on natural sun-drying or rudimentary high-temperature drying. This technological limitation severely reduces bioactive compounds and essential oils, yielding mostly raw materials with minimal added value.

From a service provision perspective, this upstream bottleneck paralyzes downstream experiential design. Managers of tourist areas and resorts (M1, M2) expressed frustration over the inability to source standardized, premium intermediate preparations (e.g., concentrated extracts, cosmetic-grade essential oils) locally. Homestay owners (HO1, HO2) further added that uncertified, manually processed products with poor packaging create safety liabilities, making it impossible to design intensive therapies like specialized hydrotherapy or acupressure.

4.2.3. Supply chain disruptions and bottlenecks in infrastructure and human resources

The systemic failure to integrate medicinal agriculture into travel services is fundamentally driven by a lack of stakeholder consensus. Traditional medical knowledge is often kept secret, which traditional healers (H1) argue is necessary to protect their heritage, but this secrecy inadvertently creates barriers to standardizing operations for professional tourism services. Additionally, travel agency directors (TA1) highlighted a critical shortage of interdisciplinary human resources - professionals proficient in both high-end hospitality and indigenous traditional medicine.

The ultimate consequence of these combined barriers is severe internal economic leakage. Resort managers (M1, M2) reported that they cannot establish direct B2B purchasing contracts with local farmers due to strict microbiological and chemical residue standards that traditional cultivation cannot meet. As a result, tourism facilities are forced to import standardized essential oils and bath salts from other provinces. Instead of retaining tourism revenue to reinvest in community livelihoods and indigenous conservation, the capital leaks out of the local economy, significantly weakening the destination's overall competitiveness.

Table 4. The wellness tourism value chain structure in the Bay Nui region

Value Chain Subsystem	Operational Status	Core Bottlenecks	Orientation
Input supply	Exploitative natural harvesting; Extensive agricultural cultivation	Ecological depletion risks; Unmet medical standards (GACP-WHO)	Organic intercropping under forest canopy; Genetic resource protection planning
Preliminary & Deep Processing	Distribution of raw materials; Manual sun-drying methods	Reduced bioactivity; Limited deep extraction technology	Deep processing (essential oils, extracts); Commercial standardization (OCOP)
Service Experience	Basic service provision; Spontaneous, seasonal spiritual tourism	Internal economic leakage; Shortage of interdisciplinary personnel	Integration of high-end Resorts: Personalized therapy, functional ethnobotanical nutrition, meditation

Source: Compiled based on the value chain model (2025)

4.3. Proposing a comprehensive wellness tourism value chain model

The traditional Triple Helix model (State-Academia-Industry) is insufficient for rural wellness tourism as it often marginalizes the role of local heritage holders. To address the identified supply chain disruptions and transform herbal potential into a complete wellness tourism value chain, this study proposes a framework grounded in the Quadruple Helix Model. The inclusion of the Community as the fourth helix is theoretically justified because indigenous farmers and healers are not merely resource providers; they are the core preservers of the medicinal genetic repository and traditional medical knowledge. Without their active participation in eco-cultivation and knowledge transfer, the wellness tourism experience loses its authenticity and sustainability.

Therefore, this framework establishes an organic linkage involving four key actors:

- (1) State: Creating legal frameworks and planning policies;
- (2) Scientists (Academia): Conducting research, transferring processing technology, and standardizing indigenous knowledge;
- (3) Tourism Enterprises: Commercializing services and designing wellness experiences;
- (4) Local Communities: Directly undertaking biodiversity conservation and preserving medical heritage.

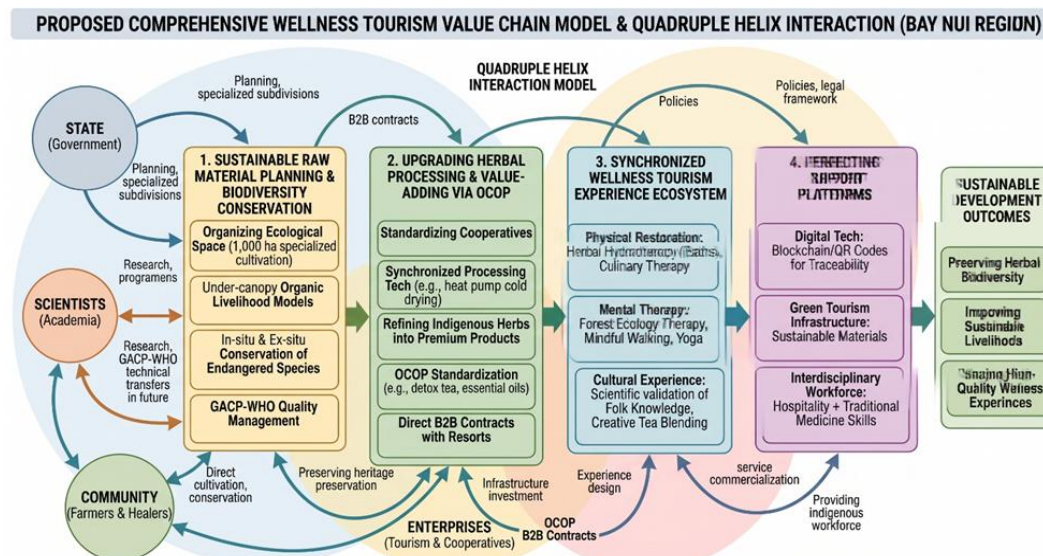


Figure 1. A comprehensive wellness tourism value chain & Interaction Model of the Quadruple Helix in Bay Nui region, Source: Compiled by the author.

4.3.1. Sustainable raw material planning and biodiversity conservation

To ensure a sustainable supply chain, An Giang authorities must establish specialized wellness tourism subdivisions in Bay Nui, targeting 1,000 hectares for medicinal cultivation. Promoting ecological forest contracting models will empower indigenous communities to cultivate organic herbs under the forest canopy, transforming locals from mere exploiters into proactive ecological co-managers. Concurrently, implementing in-situ conservation for endangered species and developing high-tech nurseries for ex-situ conservation are critical to restoring genetic diversity. Furthermore, upgrading these raw material areas to comply with GACP-WHO standards via technology transfer is mandatory. This strict quality management - from seed selection to harvesting - eliminates chemical risks and legally validates Bay Nui herbs for intensive resort therapies, thereby solidifying tourist trust.

4.3.2. Upgrading herbal processing and adding value through the OCOP ecosystem

Overcoming processing limitations requires standardizing cooperative capacities. Farmers and small facilities need sustainable financial access to upgrade to synchronized technologies, such as heat pump cold drying. To ensure practical feasibility, local authorities should facilitate specific funding mechanisms, such as unlocking provincial agricultural extension funds, providing targeted OCOP development grants, or offering low-interest green credit lines through local commercial banks. This modernization preserves crucial bioactivity, strengthens the legal standing of cooperatives, and enables direct B2B contracting with major resorts. Additionally, leveraging the OCOP (One Commune One Product) framework is essential for refining indigenous herbs into premium therapeutic products. Replicating successful local models (e.g., Palmania palm sugar, Thao An Khang detox tea) will standardize the supply chain for high-end spas, significantly deepening the tourist experience.

4.3.3. Establishing a synchronized wellness tourism experience ecosystem

To establish a synchronized wellness tourism experience ecosystem, lodging facilities must prioritize physical restoration by integrating hydrotherapy, such as herbal baths and acupressure utilizing local essential oils. This physical rejuvenation should be supported by a closed macrobiotic ecosystem that incorporates local pharmacological properties into functional culinary menus to promote internal recovery. Beyond physical health, mental therapy can be facilitated by leveraging the region's semi-mountainous terrain and medicinal ecological spaces for forest ecology therapies. Practices such as mindful walking within medicinal gardens can effectively reduce stress hormones, especially when travel enterprises integrate these therapies into ecolodges alongside complementary activities like sunrise yoga and sound healing. Furthermore, these physical and mental wellness practices must be anchored in deep cultural experiences that transmit indigenous folk knowledge. The uniqueness of the Bay Nui region relies on the scientific validation and clarification of folk remedies that frequently carry religious overtones. To actualize the Scientists role within the Quadruple Helix, academic institutions and university pharmacology departments can partner with local healers to empirically analyze the bioactive compounds of endemic herbs. By conducting clinical safety trials and establishing standardized dosages, scientists can transform purely experiential folk medicine into verified, safe therapies suitable for international spa menus. Consequently, by participating in creative, hands-on experiences - such as blending these scientifically-backed sedative teas at local traditional medicine facilities tourists are able to foster a profound connection with the destination's traditional heritage

4.3.4. Perfecting support platforms: Digital technology, infrastructure, and human resources

To perfect the foundational support platforms for this value chain, the medicinal management system must undergo comprehensive digitization to enhance brand value. Implementing technologies such as blockchain and QR codes enables tourists to authenticate the value chain - from cultivation to pharmacological standards - thereby solidifying consumer trust. Alongside digital integration, the physical expansion of wellness tourism facilities must strictly adhere to sustainable principles. This involves planning tourism infrastructure that respects local ecosystems by standardizing the use of indigenous architectural materials, such as bamboo, wood, and palm leaves, within green building frameworks. Finally, sustaining these technological and infrastructural advancements requires an interdisciplinary tourism workforce proficient in both customer service and indigenous medical knowledge. To achieve this, local authorities should coordinate with the Oriental Medicine Association and vocational schools to establish clear occupational skill standards. Cultivating this indigenous workforce not only preserves the core cultural values of the That Son area but also ensures that economic benefits remain equitably distributed within the local community.

4.4. Discussion

This study outlines a systematic approach to transforming raw medicinal resources and indigenous medical knowledge into a structured wellness tourism value chain. The findings indicate that overcoming current weak linkages requires harmoniously integrating economic efficiency with ecological conservation strategies and comprehensive quality standardization technologies.

To theoretically validate the proposed Quadruple Helix model, it is essential to contextualize the Bay Nui region's bottlenecks within broader Asian herbal tourism landscapes. For instance, in the early development of Ayurveda tourism in Kerala, India, a primary barrier was the lack of standardized therapeutic quality, which hindered international trust. India successfully addressed this by implementing strict state-led quality certifications (e.g., the AYUSH system). This international precedent strongly validates this study's recommendation to enforce GACP-WHO standards and leverage the OCOP framework for Bay Nui's herbal processing. Without such rigorous standardization, as observed in Bay Nui's current state of exploiting raw materials, high-end commercialization remains unattainable.

Similarly, compared to Thailand's highly successful integration of traditional herbal treatments (e.g., Nuad Thai and herbal compresses) into luxury hospitality, Bay Nui struggles significantly with a severe shortage of interdisciplinary human resources. Thailand overcame this bottleneck by formalizing traditional medicine within national vocational training frameworks. The Bay Nui model strategically aligns with this trajectory by proposing that local authorities coordinate with the Oriental Medicine Association to establish standardized occupational skills, ensuring service quality meets international hospitality standards.

Ultimately, while traditional value chain literature often separates agricultural supply from tourism demand, this study advances the theoretical framework by demonstrating that the Community - acting as the fourth helix - is the indispensable bridge. The Bay Nui case proves that empowering local farmers and traditional healers is not merely a corporate social responsibility initiative; rather, it is a structural prerequisite for preventing internal economic leakage, halting ecological depletion, and ensuring the absolute authenticity of the wellness tourism experience.

5. CONCLUSION

The Bay Nui region possesses unique competitive advantages for wellness tourism development, driven by a diverse medicinal herb ecosystem and indigenous medical knowledge resulting from the long-term cultural exchange and acculturation among the Viet, Hoa, and Khmer communities. However, these core resources are currently underutilized due to overexploitation pressures, rudimentary processing technologies, and severe disruptions in value chain networks. To construct a comprehensive wellness tourism ecosystem, this study proposes a synchronized Quadruple Helix model encompassing four pillars: (1) planning and conserving raw material areas, (2) upgrading processing capacities through the OCOP framework, (3) designing holistic experience chains, and (4) integrating digital traceability platforms. Effectively implementing this model will allow the destination to offer high-value therapeutic products while ensuring sustainable development: preserving biodiversity and securing long-term community livelihoods.

REFERENCES

- [1] Global Wellness Institute, “Wellness Policy Toolkit: Physical Activity,” 2023. Accessed: Apr. 12, 2026. [Online]. Available: <https://globalwellnessinstitute.org/industry-research/2023-wellness-policy-toolkit-physical-activity/>.
- [2] M. Smith and L. Puczkó, *Health and Wellness Tourism*, 2nd ed. London, U.K.: Routledge, 2014.
- [3] H. Song, J. Liu, and G. Chen, “Tourism value chain governance: Review and prospects,” *J. Travel Res.*, vol. 52, no. 1, pp. 15–28, 2013, doi: <https://doi.org/10.1177/0047287512457264>
- [4] Standing Committee of the National Assembly, “Resolution No. 1654/NQ-UBTVQH15 on the arrangement of commune-level administrative units of An Giang province in 2025,” *15th National Assembly*, Jun. 16, 2025. [Online]. Available: <https://vanban.chinhphu.vn/?pageid=27160&docid=214010>
- [5] H. L. Dunn, “High-level wellness for man and society,” *Amer. J. Public Health Nation's Health*, vol. 49, no. 6, pp. 786–792, Jun. 1959, doi: <https://doi.org/10.2105/AJPH.49.6.786>
- [6] World Health Organization, Constitution of the World Health Organization, 1948. [Online]. Available: <https://www.who.int/about/governance/constitution>.
- [7] K. I. Thal, *Wellness Tourism: An Introduction*. Hays, KS, USA: Fort Hays State University Pressbooks, 2025.
- [8] M. Smith and L. Puczkó, *Health and Wellness Tourism*. Oxford, U.K.: Oxford, 2009.
- [9] Global Wellness Institute. "What is Wellness?" Global Wellness Institute. Accessed: Apr.14, 2026. [Online]. Available: <https://globalwellnessinstitute.org/what-is-wellness/>.
- [10] A. B. Cunningham, *Applied Ethnobotany: People, Wild Plant Use and Conservation*. London, U.K.: Earthscan, 2001.
- [11] M. E. Porter, *Competitive Advantage: Creating and Sustaining Superior Performance*. New York, NY, USA: Free Press, 1985.
- [12] Global Wellness Institute, *The Global Wellness Economy Monitor 2025*. Miami, FL, USA: Miami, 2025.
- [13] E. G. Carayannis and D. F. J. Campbell, “Triple helix, quadruple helix and quintuple helix and innovation,” in *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship*. Berlin, Germany: Springer, 2010, doi: https://doi.org/10.1007/978-1-4614-6616-1_394
- [14] T. T. S. Le, Q. M. Vo, and H. V. Phan, “Assessing the current status, potential exploitation, and conservation of medicinal plant resources in the Bay Nui region, An Giang province,” (in Vietnamese), in *Proc. 7th Nat. Sci. Conf. Ecol. Biol. Resour.*, 2017, pp. 1421–1427. [Online]. Available: https://www.researchgate.net/publication/323003378_Danh_gia_thuc_trang_tiem_nang_khai_thac_va_bao_ton_nguon_tai_nguyen_cay_thuoc_vung_Bay_Nui_An_Giang.
- [15] Government of Vietnam, “Decree No. 32/2006/ND-CP on the management of endangered, precious, and rare forest plants and animals,” Mar. 30, 2006. [Online]. Available: <https://vanban.chinhphu.vn/?pageid=27160&docid=15193>.